ATHLETIC JOURNAL

Vol. XXIV. May, 1944

Teaching and Analyzing High Jumpers
George E. Haney

Learning to Be an Infielder
J. E. Gorgen

Hints for Coaching the Sprints
Emil G. Schultz

Only ONE strike in this league!

Yes, they're playing different rules *this* season, coach. They've had to make themselves forget a lot of the good, clean sportsmanship you drilled into them. They've had to forget about giving the other team an even break. Training table, regular hours are just a pleasant memory.

But there's a lot you stand for that they aren't forgetting. They haven't forgotten how to fight to *win* . . . they haven't forgotten how to work and fight as a *team* . . . nor how to steady up in the clutches . . . how to keep on playing right up to the third out in the last of the ninth and never mind the score.

And it's those things that you alone could give them that are helping them do their grim tasks better.

So keep it up, coach . . . keep driving home the team spirit . . . building stamina and punch and fighting heart in those youngsters coming up. America can never have too much of the stuff you're turning out.

Now as always, you can count on Bike for the kind of dependable, long-lasting support so vital to their athletic training period. Bike will continue to supply the best possible protective garments under existing conditions.

THE BIKE REG. U.S. PAT. OFF.

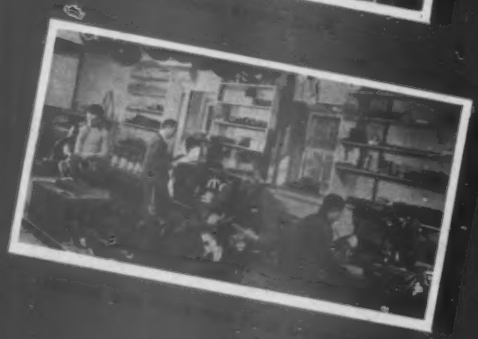
SALES AGENTS: A. S. Callaway & Co., Inc., 306 Broadway, New York • Martin & Martin, 5 South Wabash Avenue, Chicago • McDonald & Billmire, 619 Mission Street, San Francisco • John H. Graham & Company, Inc., 105 Duane Street, New York • H. B. Hughes, 1143 Liberty Bank Bldg., Dallas.

★ **THE BIKE WEB COMPANY**—41 West 25th Street, Chicago, 16 ★

Recondition NOW!

Rawley Rebuilds

Chest Protectors
Face Masks
Shin Guards
(Girls' and Boys')
Inflated Goods
(Basketballs and Footballs – Laced and Laceless)
Gym Mats
Pads for Blocking Sleds
Helmets
Shoulder Pads & Hip Pads
Shoes
(Football, Baseball and Track)
Uniforms
(Football, Basketball and Baseball)



Rawley Service Features:

Equipment Bond Your equipment is bonded in shipment both ways and while in our storage. A certificate of insurance is issued to you when the equipment is received by us. No danger of financial loss!

Shipping Service Just write or wire us and we will send you a bag in which to ship equipment. No fuss or bother to you. We pay the "freight".

Storage We will store your equipment at no additional charge until the next season or until you request its return to you. Insured storage!

Girls' Equipment We recondition all types of girls' athletic equipment.

Rawley Serves West Point, Annapolis, Yale, University of Maryland, Columbia — and countless others.

Rawley Co
NEW ROCHELLE, N. Y.

14 YEARS OF COMPLETE DEPENDABLE RECONDITIONING

Reconditioners of Athletic Equipment

AND NOW A STAR HAS BEEN
ADDED...THANK YOU UNCLE SAM
FOR AGAIN HONORING
THE MEN AND WOMEN OF Rawlings

"FOR OUTSTANDING ACHIEVEMENT ...IN PRODUCING WAR EQUIPMENT"

This Badge of Honor is being proudly worn by every employee of Rawlings Manufacturing Co. It is a daily reminder that their production of quality War Materials and Athletic Equipment is an essential factor for the safety, well being, and Health of our Fighting Men.

We again wish to thank our suppliers and sub-contractors for their part in making it possible for us to win this second award.

We shall all continue our work with renewed determination to produce to the best of our ability.

★

IN WAR — Arsenal of Athletic Goods for the Armed Forces.

IN PEACE — Source of Supply for Leading Athletic Goods Distributors.

RAWLINGS MANUFACTURING

WE WERE THE FIRST ATHLETIC GOODS MANUFACTURER TO BE AWARDED THE ARMY-NAVY 'E'... NOW THE FIRST TO RECEIVE THE STAR . . .

★ ★ ★ ★ ★ ★ ★ ★ ★

WAR DEPARTMENT
OFFICE OF THE UNDER SECRETARY
WASHINGTON 25, D. C.

FOR VICTORY BUY UNITED STATES WAR BONDS AND STAMPS

22 April 1944

To the Men and Women
of the Rawlings Manufacturing Company
Lucas Avenue at Twenty-Third
St. Louis, Missouri

I am pleased to inform you that you have won for the second time the Army-Navy Production Award for meritorious services on the production front.

You have continued to maintain the high standard that you set for yourselves and which won you distinction more than six months ago. You may well be proud of your achievement.

The White Star, which the renewal adds to your Army-Navy Production Award flag, is the symbol of appreciation from our Armed Forces for your continued and determined effort and patriotism.

Sincerely yours,

Robert P. Patterson
Under Secretary of War

RAWLINGS

THIS TRADE MARK ON ATHLETIC EQUIPMENT IS YOUR ASSURANCE OF QUALITY

COMPANY . . . ST. LOUIS

IT PAYS TO PLAY

VOLUME XXIV

The ATHLETIC JOURNAL

NUMBER 9

CONTENTS

for May, 1944

PAGE

9 Teaching and Analyzing High Jumpers.....George E. Haney

12 Learning to Be an Infielder.....Joe Gargan

14 Editorials

16 Hints for Coaching the Sprints.....Emil G. Schultz

20 A Five-Point Training Program for Distance Runners .....Ford A. Hess, C. Sp. (a) U. S. N. R.

34 Specific Suggestions on Catching, Pitching, Hitting and Outfield Play

43 The Trainers Section

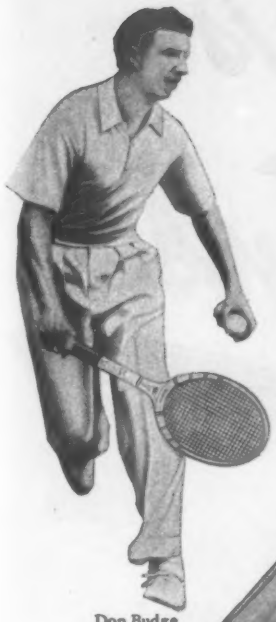
44 The Fundamental Principles Underlying Training Rules .....W. W. Tuttle

45 Why Exercise?..Lloyd C. Winter, Lieutenant (j.g.) U. S. N. R.

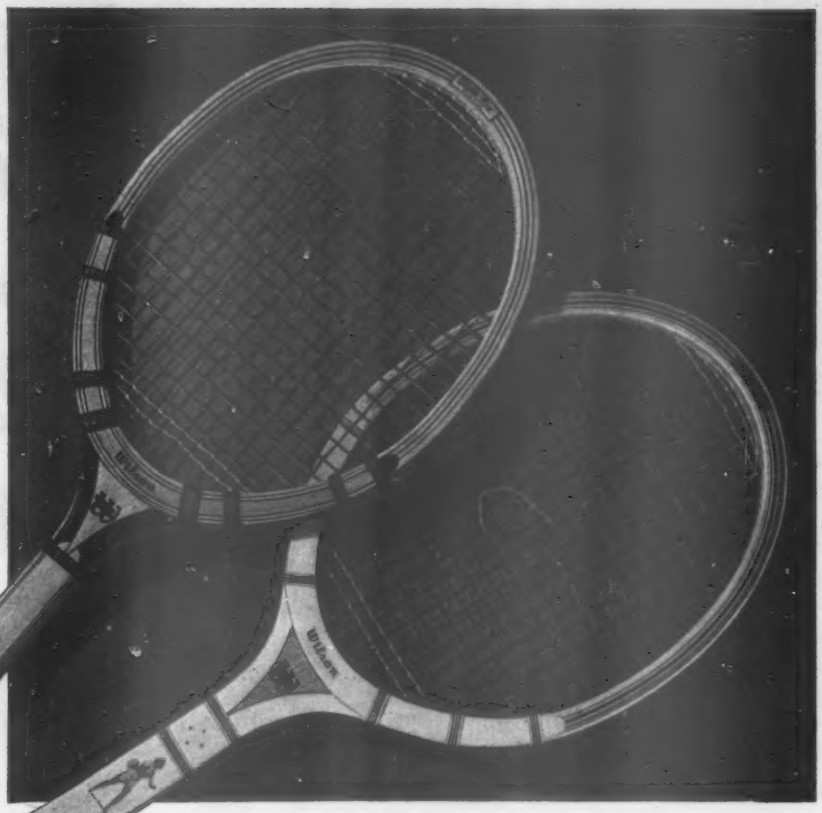
47 Players, Red Flags, Officials Versus Rules.....“Lil” Dimmitt

PUBLISHED MONTHLY except July and August by the Athletic Journal Publishing Company, 6858 Glenwood Avenue, Chicago, Illinois. Member Audit Bureau of Circulations. Request for change of address must reach us thirty days before the date of issue with which it is to take effect. Duplicate copies cannot be sent to replace those undelivered through failure to send advance notice

SUBSCRIPTION PRICES: $1.50 per year; $2.00 for two years; $2.50 for three years; 90 cents for six months; 75 cents for five months; Canada, $1.75 per year; foreign $2.00 per year. Single copies, 25 cents. Copyright, 1944, The Athletic Journal Publishing Company. Entered as second-class matter, August 14, 1925, at the post office at Chicago, Illinois, under the Act of March 3 1879.



Don Budge



If it's a Wilson it's a *Quality* job

The 1944 tennis season will find Wilson Tennis Equipment, favorite of leading stars for many years, still a favorite and still of the same fine quality. Wherever you find Wilson tennis rackets and tennis balls you can be sure of the best available quality at the price. Play tennis and play *your best* with Wilson equipment.

The new Wilson Championship Tennis Ball is a strictly quality ball. You'll find life and action in it. Your serves and drives will behave. That uncontrollable tendency of the ball to "float" over the back line will be missing. So, make it a point to get some of these new Wilson "Championship" Tennis Balls.

GUT STRINGS BY WILSON & CO. **All Wilson quality rackets have the famous Wilson Strata-bow frames and are strung with quality-gut strings made by Wilson & Co., Meat Packers, Chicago. Wilson Sporting Goods Co., Chicago, New York and other leading cities.**

Wilson Athletic Goods Mfg. Co., Inc.
Chicago Plant

Don Budge is retained on Wilson's advisory staff

Wilson
TENNIS EQUIPMENT

IT'S WILSON TODAY IN SPORTS EQUIPMENT

for America's Sports Fans

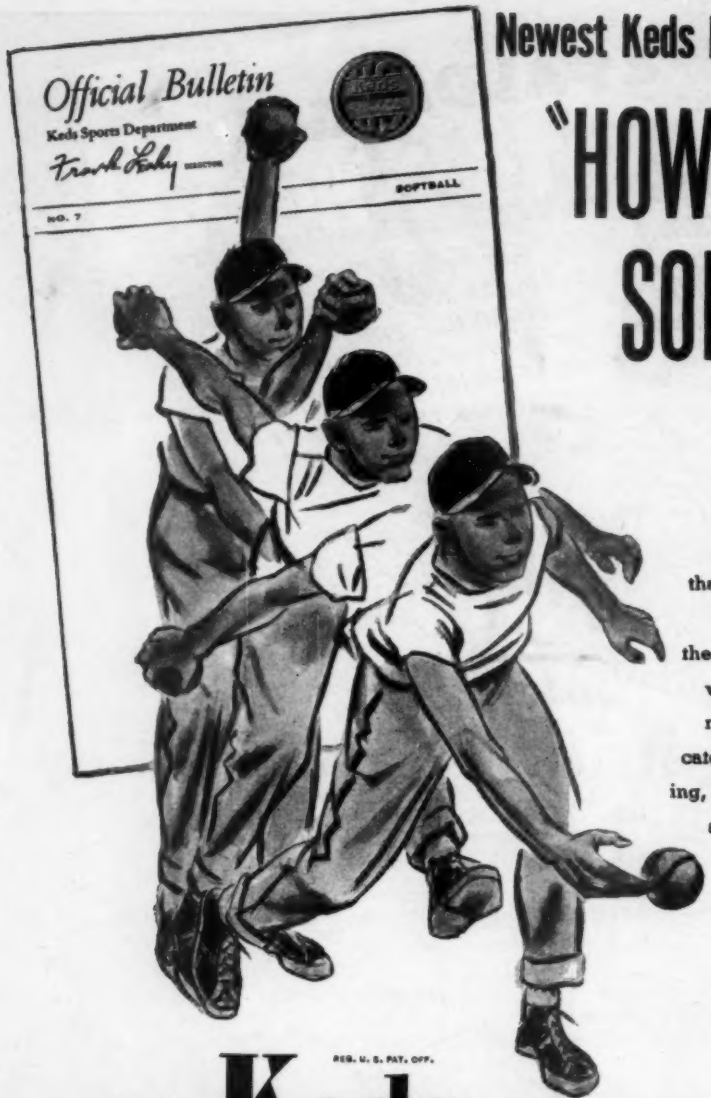
• The liveliest series to hit the nation's sports pages in many a day... packed with interesting sports facts . . . and pointed to one clear conclusion—that Spalding always has *and always will* set the pace in sports.

The series is running in leading newspapers of the United States reaching millions of people... creating greater sports enthusiasm and convincing them of Spalding's leadership in the world of sports. It helps *you* because its educational features promote a greater, wider interest in *all* sports.

SPALDING SETS THE SPALDING **PACE IN SPORTS**

SPALDING
SPORTS SHOW
A PITCHING "GREAT" OF THE EARLY DAYS!
AL SPALDING PITCHED FOR THE FAMOUS FOREST CITYS OF ROCKFORD, ILL.— FIRST WESTERN AMATEUR CLUB TO GO ON TOUR, WINNING 51 OUT OF 65 GAMES. AL'S COMPANY MANUFACTURED THE FIRST BASEBALL
HIGHEST BASKETBALL SCORE 234-2
SIX POINTS A MINUTE WAS THE AMAZING AVERAGE MADE BY KANSAS CITY, KAN, AGAINST RAINBOW A.C.
Official National League Ford C. Frick
NATIONAL LEAGUE'S ONLY OFFICIAL BALL
THE BALL THAT HAS STARRED IN EVERY NATIONAL LEAGUE GAME FOR 68 YEARS
SPALDING
"SETS THE PACE IN SPORTS"
A. G. SPALDING & BROS.
HOW TENNIS BEGAN
THE GAME STARTED IN EGYPT, BECAME A ROYAL PASTIME IN FRANCE. TENNIS COMES FROM "TENEZ"— FRENCH FOR "TAKE IT, PLAY!" SPALDING MADE THE FIRST TENNIS BALL IN AMERICA
New York Herald-Telegram
INTO KIRTS
The Sun
ARMY TAKES KERCH
CLEVELAND PLAIN DEALER
BOMBS NEAR CZECHOSLOVAK BORDER
The New York Times.
Herald Tribune
Los Angeles Times
The Detroit Free Press
THE HOUSTON CHRONICLE
The Detroit News
Boston Daily Globe
STORM ACROSS PRUT
Los Angeles Examiner
HAPLIN LOSES DISMISSAL PLEA
The Boston Post
SMASH 288 JAP PLANES IN RAID
The Times-Picayune
San Francisco Examiner
DOOLITTLE'S BOMBERS HIT BERLIN AGAIN
The Evening Star
Pittsburgh Post-Gazette
ATTACK ON GASSING

Newest Keds Bulletin for your Sports Library



"HOW TO PLAY SOFTBALL"

—ready now!

Softball is a favorite with our fighting men from Alaska to Zanzibar. At home it's a sport that five million play and seventy-five million watch. The newest Keds Sports Bulletin, #7 in the series, is just off the press. Every boy in America will want to study and practice Softball with this new handy booklet that explains rules, pitching, catching, batting, base running, infielding, outfielding, shortfielding and strategy. Free copies are available to you, your staff and student leaders. Simply fill in the coupon below and mail it to Frank Leahy.

REG. U. S. PAT. OFF.

U.S. Keds

SPORTS DEPARTMENT

UNITED STATES RUBBER COMPANY

1230 Sixth Avenue • Rockefeller Center New York 20, N.Y.

FRANK LEAHY, Dir., Keds Sports Dept.
1230 Sixth Avenue, New York 20, N. Y. cc

Dear Frank:

Please send me.....copies of Keds Sports Bulletin #7, "How to Play Softball."

NAME_____

ADDRESS_____

CITY_____ COUNTY_____ STATE_____

Bert Atkinson clears the bar at 6 feet, 1 inch to win the high jump and chalk up the second winning performance for Navy at the I.C.4A track and field championships, held at Madison Square Garden, March fourth.

Bill Vessie of Dartmouth, who formerly competed for Columbia University, hurtles over the bar to retain his high jump crown with a leap of 6 feet, 6 inches, at the Millrose Games.

(Left) Fred Sheffield of Utah University high jump winner N. C. A. A. 1943.

Teaching and Analyzing High Jumpers

By George E. Haney
Assistant Track Coach, Ohio State University

THE history of the running high jump furnishes a clear example of how athletes develop by experimentation until a form evolves that approaches perfection. The easiest way to jump is the method used by all small boys in leaping over a hedge or fence—the so-called scissors style, lifting the leg nearest the obstacle first, pushing the body up vertically, and then whipping the second leg over. The weakness in this method is that the entire body has to be lifted vertically until the crotch clears the bar. Jumpers have cleared six feet this way, but with a body layout, they might have jumped four to six inches higher.

The advantage of a form using a body layout is obvious; the weight is distributed horizontally and the total body weight does not have to be lifted so high. Some early jumpers obtained a layout by using the scissors and then leaning over backwards to clear the bar. This, although better than the plain scissors jump, was awkward, resulted in bad falls, and made the kick-up of the lead leg difficult. It is hard to kick and push while falling backwards.

The next significant development was the Sweeney style and its modifications, known as the eastern roll. This jump started like the scissors, but at the peak of the jump, the body was thrown parallel to the crossbar and the pushing leg was whipped *up* and cut *under* the kicking leg so that the jumper came down facing the crossbar. This form of jumping was used for a long time, and produced some fine records. Its weakness was that the timing was very difficult.

The western-roll form was the next development. It involved a kick-up of the leg farthest from the bar. By kicking the outside leg, the jumper threw himself into an easy, natural layout, and gained the advantage of the set of muscles around the hips, for as the outside leg was whipped up and over the bar, the entire body and hips were rocked upward with a freer action than the other forms permitted. Soon jumpers using this form were breaking the records. An additional advantage was that the position over the bar could even be perfected to the point of gently pressing down the bar and rolling over it without displacing it.

In the western roll, the jumper cleared the bar lying on his side. So the next logical step was to roll a bit farther into a prone position, for the hips are wider laterally than they are from front to back. With the extra inches gained by this evolution, the records took another rise.

This face-down modification of the western roll, variously called barrel roll, straddle, belly roll, is used by many top jumpers, but is difficult to teach because of the tendency of beginners to want to roll too soon, to dive, or to forget to kick. It has been my experience that it is easier to teach the western-roll form, and later switch to the modified form. Most of the top jumpers use the western roll for practice and warm-up because it corrects the worst problems of the modified version. Les Steers, for instance, used the western roll and switched to the other for his top jumps only. Mel Walker and Dave Albritton did the same. It would be interesting to know if Cruter and Cornelius Johnston used the western roll for low heights.

It seems to me, therefore, that a good jumper should be able to use both of the roll forms, interchanging them at will for practice or competition. Some teaching methods for both forms will be described, so take your choice. I gave up the eastern style long ago, so I do not feel qualified to discuss it.

Beginning the Western Roll

Much has been said about ideal high-jumping build. The only practical test is to try everybody. There is a surprising variety of builds in successful high jumpers. I like to see everybody learn to high-jump simply because it is fun.

In starting a beginner in the roll jumps, the first job is to convince him, if he needs convincing, of its advantages. The next step is to be sure that he thinks he *can* learn it. I have heard hundreds of boys say, "I can't do the roll." This is pure nonsense. I have never yet found a boy who could not do at least a rough version of the roll within five minutes. Some can copy form instantly. One of my greatest coaching thrills came when I showed a little boy 4 feet 11 inches how to do the roll. The first day he jumped 5 feet 1 inch —two inches over his head.

The secret of teaching the roll is to start the jumpers at low heights. First set a crossbar about *one* foot off the ground. Use a pair of chairs if your standards will not go that low. Have the boys first go over the bar scissors style to find out which leg they like to lift. Have them try both sides. It really does not make much difference which leg a boy kicks, except that some have habitually jumped fences and hedges from one side or the other, and if one co-ordination is already developed, there is no use in changing it.

If the boy lifts the right leg, send him to the left side of the bar; if he lifts his left leg, then he does the roll approaching from the right. From here, all explanations apply to the right-footed kicker who approaches from the left.

Draw a line at a 45-degree angle from the center of the crossbar. Have the prospective jumper take a position on this line facing the center of the bar, then walk down the line, swing up his right leg, and hop over the bar with his left foot, *landing on his left foot*. Then say, "Well, you've done the western roll."

Illustration 1. Addressing the bar. This also illustrates the take-off form for an actual jump, except that the head and shoulders would be thrown back.

Be sure that the boy approaches in a relaxed, easy position, leaning forward, and that he jumps by rocking from heel to toe of the pushing foot. Do not let him *stamp*.

The next steps are simply those of polishing the form. Tell him to kick the right leg higher and harder and to draw the left foot and hip higher and higher until he can clear four feet. As soon as he starts hitting his hip against the crossbar, start working on the layout. The layout is accomplished by kicking the feet up even with the head. Do not make the error of telling a boy to lean over for his layout. This will get him in trouble later when he jumps heights of 5 feet 6 inches to 6 feet and over, for obviously a boy who is to clear 6 feet must *lift* his head, not *lower* it. If he tends to fold in the middle and cross the bar in a sitting position, it sometimes helps to suggest that he lean *back* when he kicks. He will not, actually, but the attempt will allow him to straighten his body so that he gets a free kick-up and swings his feet up even with his head in the layout.

To keep boys from leaning toward the crossbar, tell them to swing the left arm upward vigorously. (Illustration 1.) The danger in leaning is that the body is removed from the ideal position directly over the pushing foot. A good thrust cannot be obtained unless the body is over the foot.

The best method I know for teaching the layout position is to put the boy on the ground, or a bench, lying on his side. (See Illustrations 2 and 3.) There are two excellent methods of obtaining the layout. One is to keep the back to the bar by twisting the left hip and shoulder upward, as in Illustration 1. *After* the bar is cleared, the body is twisted over by a slight kick of the right leg, and the left foot is lowered for a relaxed, easy landing. Usually the jumper lets himself down easily into the pit, with his hands, as well as his left foot.

The other layout position is that with the body bent a little and the right leg carried forward so that the hip trails the rest of the body over the bar. (Illustration 3.) The landing is the same in both cases. The muscle action involved in lifting the hip away from the crossbar may be emphasized by asking the boy to lift his left hip off the ground as he lies on his side. Personally, I do not think there is much choice between the two layout methods. I let the boys use whichever method they acquire more easily.

By this time the jumper will begin to have trouble with his approach and take-off because he will be using more speed. An easy way for the boy to get the take-off point is to stand at arm's length from the crossbar, but on the line of the 45-degree angle of approach. The left foot now marks the take-off point. For a time it may help to put a piece of paper on this

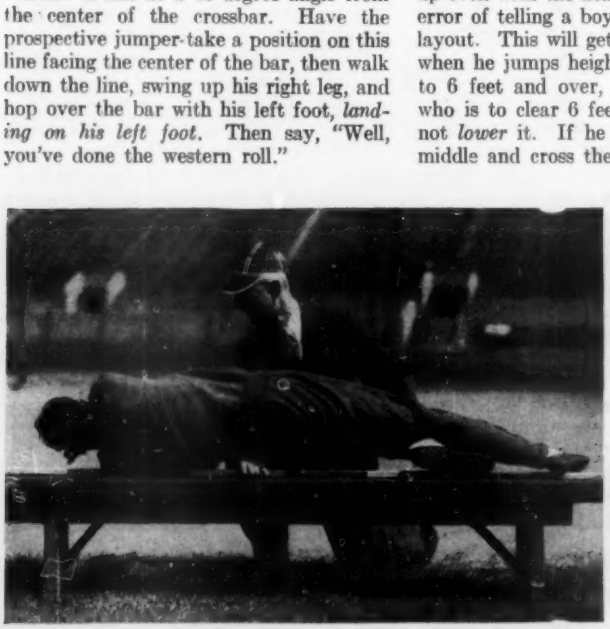


Illustration 2. Layout in the western roll, back to the bar. The athlete should be flatter on his back.

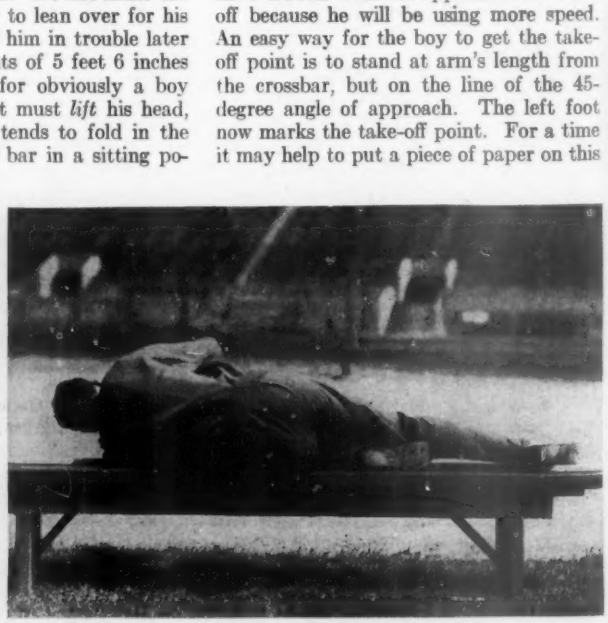


Illustration 3. Layout in the western roll, side method.

Illustration 4. Layout in the face-down modification of the western roll, illustrating the difficult left-leg action.
Illustration 5. Layout in the modified western roll, illustrating the position in which the left leg and hip should be in clearing the bar. Note the arm and head positions. The right foot should be turned sharply to the right instead of to the left.

spot and have the boy watch it until his foot strikes it, then look at the bar. Later, as he works out an exact approach, he will be able to watch the crossbar and hit his take-off spot automatically.

The approach varies from five to ten or twelve strides. The purpose of the approach is to gain sufficient momentum, without straining, to carry the body past the bar at the peak of the jump. Speed may add some height to the jump if the jumper's left leg is strong enough to change the forward momentum into *upward* momentum in a *rocking* movement. Each jumper must experiment to find what amount of speed, he can handle to advantage.

A seven-stride approach seems about average. This puts the start somewhere between twenty-five and forty feet. Have the jumper make an approach from about thirty feet and count the strides to the take-off. Then adjust the starting point until he can step out with his left foot and put his left foot on the take-off point without stretching or chopping. In testing for the starting mark, be sure that the boy is either actually jumping or is running the same as when he jumps. Otherwise the mark will not work, because his stride may be different. The same method may be used with any other number of strides desired. Be sure that the jumper works out an exact approach and knows how to adjust it for varying conditions of track, weather, and training, or he will never have the exact take-off that is so helpful for championship jumping.

The timing of the leg and arm movements is important, although it is so fast that it is hard to teach. Sometimes jumpers feel "dead" in their jumps, and look it, although they feel that their leg spring is normal. This may be from "off" timing. The leg kick and upward drive of the arms have the most effect if they are slightly delayed so that the emphasis comes as the jumper is rocking up on the toe of the pushing foot. If the left foot is pushed out as straight as it will go and the other drives synchronize with this follow-through, the jumper feels that he is flying upward with ease. If the kick comes *before* the left leg follow-through, the jump may be a bit "dead."

Be sure the jumper has his eyes open. Occasionally boys develop the habit of involuntarily closing their eyes when over the bar, which often results in needlessly displacing the bar with arms or feet.

Common Faults

As the jumper continues his practice he will develop many tendencies which have to be watched and corrected before they become habitual. In looking for these variations from good form, the coach should watch his jumpers from different angles. By taking a position at the end of the crossbar, the coach can see some details that he cannot see when behind or in front of the pit.

Following are some errors that I have found jumpers make, and some of the corrective procedures that have worked for me:

1. Peak of jump in front of the bar, the jumper coming down on the bar. This is caused by insufficient speed; too sharp an angle of approach, so that the jumper almost parallels the bar; leaning back too far at the take-off; or neglecting the push-off in favor of the kick. Check on all of these points and you will probably find the solution. Be sure that the take-off is near enough to the crossbar. Watch from a position at the end of the crossbar.

2. The left leg buckles as the runner starts to jump. He may be dropping too low, or may be running so fast on the approach that the leg cannot stand the strain of checking the forward momentum and transferring it upward. He may be tired.

3. Kicking the bar with the lead leg. This is caused by trying to roll before the jumper is off the ground, instead of going *straight up* and then snapping over. Boys have to be constantly reminded to jump *straight up*. They may be approaching too fast and plowing into the bar instead of rising. They may be careless about watching the bar. To make suggestions, watch from the end of the bar.

4. Kicking the bar with the tucked leg. The jumper may be turning too soon. He may be careless in not drawing the foot and hip high.

5. Hitting the left shoulder against the bar. This is caused by leaning at the take-off. In good form, only the hip will touch the bar.

6. Hitting the bar with the seat of the pants. This is caused by not straightening the body in the layout. To make suggestions watch from in front of the center of the bar.

7. Grabbing the bar with the hands. This is caused by fear. It usually happens when the boy is tired and knows he cannot jump well. He needs to rest, and start at low heights next time. "Addressing the bar" at heights of six feet, six inches is a good psychological corrective. This exercise is described later in this article.

8. Sore heel or shin-splints in the take-off leg. This is usually caused by stamping too hard at the take-off. The height of the jump is determined by the amount of push exerted *after* the foot touches the ground. A hard stamp simply develops a sore leg. A piece of sponge in the heel helps the soreness.

9. Lack of spring. This comes from too much jumping. All hard practice jumping should be done *before* the season starts. Of course, beginners have to keep jumping to learn form, but this should be done at low heights, and not within three days of competition. Jumpers who have mastered their form get best results, in *general*, by jumping only in competition. They should keep their legs strong, however, by a great amount of jogging, sprinting, and hurdling. Jumping puts such a strain on muscle fibers and tendons that spring is

(Continued on page 26)

Learning to Be an Infielder

By Joe Gargan

Director of Athletics, Kingswood School, West Hartford, Connecticut

IN THE April issue, the fundamental requirements of an infielder were enumerated, throwing, fielding, covering bases and playing position. The first two, throwing and fielding were discussed, somewhat at length. In this article, covering the bases and playing position will be presented. I am indebted to a member of my baseball team, D. J. O'Hare, for the drawings.

Covering the Bases

Every base must be covered on every play. This does not mean that, each time the pitcher releases the ball, someone must go and stand on each base, but it does mean that someone must be in position to do so, and alert to do it, if a play develops. As a good infielder, you must keep this always in mind, and be ever alert to cover a base when the play calls for it. The farther you play from the home plate, the more ground you can cover but, since covering a base requires taking a position close to it or even on it, you must always take your position so that you can first cover the base, and then cover as much territory as possible. For instance, if you are a first baseman and there is a runner on the base, you play the bag, and as the ball is delivered to the batter, you run out into the infield to cover as much ground as possible. In such a case you sacrifice the protection of much territory for the more important job of covering your base. This is true in every case. Your job is to cover the base first and then protect as much territory as possible.

You must keep two things in mind: (1) Be alert to cover the base on every play; (2) be in position to cover it when necessary.

Every player develops his own way of covering a base, and often this varies from a standard pattern. As a player gains experience and moves into faster company he finds that he may need to change his stance to meet the circumstances. The way to start properly, however, is to do it as simply as possible. For example, the college ball player would straddle second base when taking a throw from the catcher so as to cut off a runner stealing from first base. He would do this because the throw will be accurate and the runner will slide away from the throw. As a schoolboy player, you are better off in front of the bag, because you will be in a position to move in front of the throw which may be inaccurate. Your job is to catch the throw first, then to tag the runner. By placing yourself in front of the bag, you will be helping the catcher, as well as yourself. Since the runner coming from first will not be as speedy or as skillful a slider as in the case of a college player, it is not necessary that you straddle the bag.

The way to cover a base varies with the base, the infielder covering it and the play. In general the following are simple ways of doing it.

1. To cover first base, as first baseman, when taking a throw from the infield. Take your position with your heels touching the infield side of the bag (Diagram 1). Bend at the knees and hips to keep your body low. From this crouched position you can move readily, and you are in a position to take low throws. As the ball approaches, step out with the foot on that side and place the instep of the foot on the bag. On good throws you will find it natural to step out with the foot opposite your throwing arm. If the throw is wide, you must shift your foot on the bag to the nearest corner, touching it with your toe and stepping toward the line of throw with the other foot; stretch to reach the ball. Never cross your legs and never cling to the bag and let the ball get away from you. Shift so that the front foot is on the side toward the ball, and if you cannot be sure to reach it, move off the bag to make sure of fielding the ball. Practice shifting your feet every day from the start of the season. Do it over and over until it becomes natural to shift without thinking about it. Then practice to improve your stretch. Practice stretching for the ball on good, as well as on bad, throws. The stretch will be necessary on bad ones and often on a throw directly to you, a close play may be turned into an out by stretching to meet it.

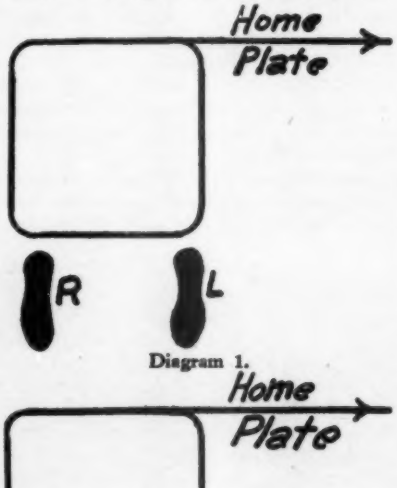


Diagram 1.

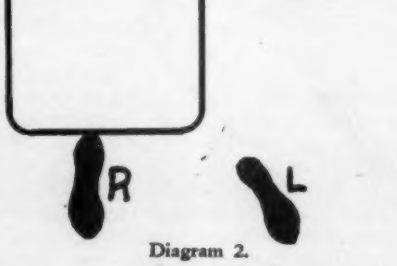


Diagram 2.

To cover the base with a runner on first. Place your right foot with the heel against the infield side of the bag and your left foot advanced toward the pitcher (Diagram 2). Keep your body low, your eyes on the pitcher, and your hands extended at knee height, about twelve inches in front of the forward leg. In tagging the runner bring the ball, which should be held firmly in the bare hand enclosed in the gloved hand, down to the second-base corner of the bag so that the runner will slide into it.

As the pitcher delivers the ball to the batter, cross your left leg over your right and step quickly out along the second-base line to be in position to field any ball coming into your territory. Keep your body low and be prepared to return to the bag quickly to cover a throw from the catcher.

When taking a throw from the catcher's position or from the infield close to home plate. Take your position facing home plate with your left foot touching the infield side of the bag and your right foot in line with it and inside the diamond (Diagram 3). This will give the infielder a target inside the base line and make the throw easier.

When taking a throw from back of the catcher's position. As, for example, when the ball is fumbled and rolls away from the catcher, take your position facing the plate, but on the *outside* of the bag (Diagram 4). In this case your right foot will be in contact with the bag and your body will be outside the base path. The throw may be made on a direct line to you without hindrance by the runner.

If you are the pitcher and the play calls for you to cover first base, run toward a point, a few feet inside the first-base line, about fifteen feet from the bag, and attempt to keep the play in front of you by curving up along the infield side of the base path. This makes it easier for you to handle a throw from the first

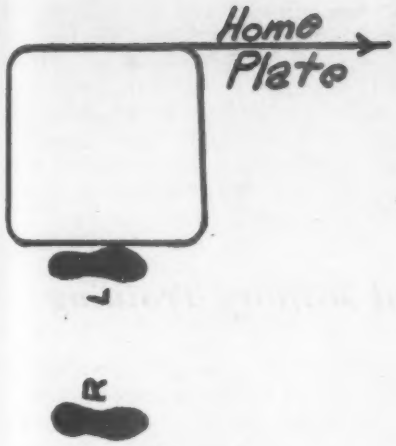


Diagram 3.

or second baseman than if you ran straight across the base from your position.

2. To cover second base—to tag the runner coming from first base. Take your position facing toward first base on the infield side of the bag with your left foot in contact with the bag and your right foot inside the diamond (Diagram 5). This is a better position from which to handle the throw than straddling the bag. If the throw is wide, move in front of it to make sure that the ball does not get away from you. If the throw is good, go to the ground as soon as you make the catch, place the gloved hand with the ball and the other hand well tucked inside on the first base side of the bag. Be sure that the ball is grasped tightly in the bare hand and that both are tucked well inside the glove.

To hold a runner on second base. Take your position in front of the bag with your heels close to it, and face the direction of the play (Diagrams 6 and 7). Do not attempt to straddle the bag. In many of these plays, however, you will not have time to take your position before the ball is thrown. In such cases the important thing to remember is to get in front of the ball.

On a double play to first base. The second baseman or short stop covers second base on any play in which the ball is thrown to second base and then to first base. In either case the player, who covers second, should attempt to reach the base as quickly as possible, make sure that the put-out is made at that point, and then step out of line with the runner and make the throw to first base. The player thus acting as pivot-man finds himself called upon to vary his procedure because of different circumstances, but, in general, when you are acting as pivot-man, you should proceed as follows:

1. If possible, take your position covering the bag before the throw is made. In case you are able to do this, assume a position facing the play with your feet straddling the bag. If the throw is accurate you can then step out of the way of the runner with your left foot and drag your right foot across the bag to make the put-out.

2. If you must tag the bag while in motion, approach it so that you are moving directly toward the thrower and in line with the throw.

3. Try to step on the bag with your right foot.

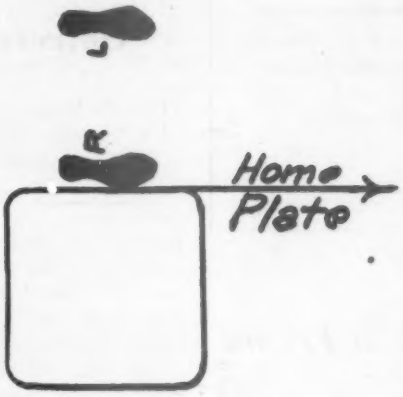


Diagram 4.

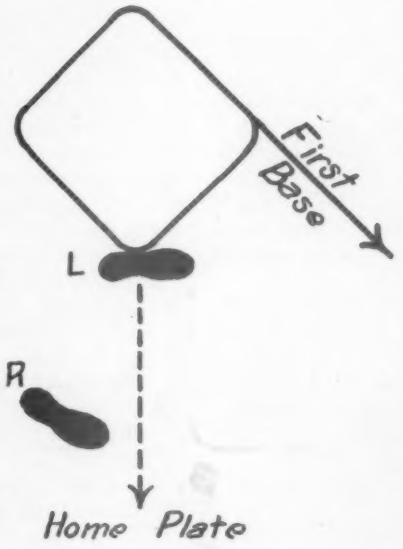


Diagram 5.

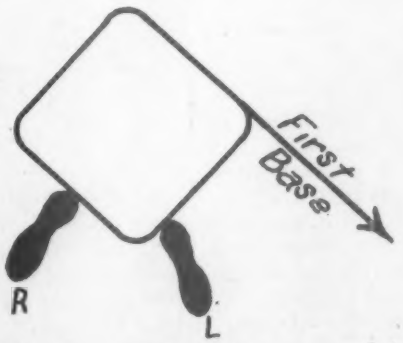


Diagram 6. (Infield throw.)

4. Be sure to touch the bag or tag the runner before you make the throw. Even if it means that you will be unable to complete the play to first base, always attempt to make the put-out of the runner at second base.

Here is the simplest way of making the play while you are in motion:

As second baseman, move in a curving line toward the base so that you are approaching the bag directly in line with the throw. Try to step on the bag with your right foot, then step into the diamond, making this step as much toward home plate as possible (Diagram 8). This will take you out of line with the runner. Throw as your right foot hits the ground. If you are forced to touch the bag with your left foot you must take an extra step, which means that you step off the bag with your right and then step with your left before throwing. Try to hit the bag with your right foot.

As Shortstop, move in a curving line toward the base keeping the throw directly in front of you. Step on the bag with the right foot, then hop into throwing position on the outfield side of the bag with your feet on line toward first base (Diagram 9). This hop will put you into position more quickly and effectively than if you attempt to step into position.

3. To cover Third Base when taking a throw from the Infield or Outfield. Take your position with your feet naturally spread and your heels close to the infield or outfield side of the bag (Diagram 10). Do not straddle the bag, but stand on the side from which the throw is to be made. Keep your body low, and if the throw is to one side, shift to a point directly in front of it.

When taking a throw from the Catcher. Take your position with your feet naturally spread and your right foot in contact with the infield side of the bag. Your left foot will be in the infield and you should be facing directly toward the catcher. (Diagram 11). Keep low and be prepared to shift in front of the throw. Bring the ball down with both hands to the home plate corner of the bag so that the runner will slide into it.

When holding a runner on the base. Place your right foot with the heel against

(Continued on page 30)

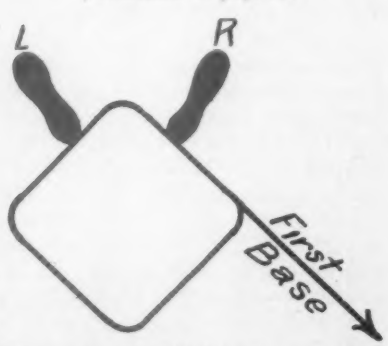


Diagram 7. (Outfield throw.)

The ATHLETIC JOURNAL

Nation-Wide Amateur Athletics

Vol. XXIV May, 1944 No. 9

Published by
THE ATHLETIC JOURNAL PUBLISHING CO.
6858 Glenwood Avenue
Chicago, Illinois

JOHN L. GRIFFITH, Editor

Secretary Frank Knox, a Friend of Athletics

WITH the death of the Secretary of the Navy, Colonel Frank Knox, competitive athletics in the nation lost a valuable friend. Colonel Knox played football and baseball in his college days which perhaps accounts for the fact that, throughout his life, he believed in, and championed, competitive athletics. The writer of this wholly inadequate tribute to Colonel Knox recalls the time when the Colonel wrote a check for $5,000 to be used in support of American Legion baseball.

After he entered the service as Secretary of the Navy, we recall a brief visit some two years ago. On that occasion we mentioned the fact that the schools and colleges which were retaining their athletic programs were doing so, in the belief that thus they were contributing to the war effort. We asked the Colonel if he agreed with that point of view and his cryptic reply was, "I believe in competitive athletics."

In the February issue of the ATHLETIC JOURNAL we reproduced a large part of the address made by Secretary of the Navy Frank Knox before the Touchdown Club in Washington, D. C., Tuesday, January 11, 1944. In this address, as in other instances, the Secretary made clear his belief in competitive athletics and, further, expressed his conviction that athletic training in this nation is an aid to military training. We do not recall that he spoke of the values of athletics in terms of morale, entertainment or recreation. He was primarily interested in helping organize the nation for war and he believed that the men who had the competitive spirit—the spirit that is a part of school and college athletics—made the best soldiers and sailors.

We should remember Frank Knox for the support that he gave Admiral Radford, Commander Tom Hamilton, Commander Frank Wickhorst and all of the other men who were responsible for the development of the navy pre-flight schools. These schools were largely based on the idea that one way to make fighting men tougher than their opponents was by giving them the opportunity of participating in fighting games. Frank Knox was a fighter and naturally he supported this idea that was the foundation of the pre-flight schools.

Universal Military Training

TO OUR way of thinking, it is too early to attempt to decide whether or not we are to have universal military training following the war. As has been pointed out by others, there is no present military need along this line, and if we are to think of the matter in terms of future years, the time is not opportune for the making of such a decision. Who knows what kind of an army we will need when peace is declared? Who knows what the young men, who are now fighting this war, think about the question? Their children are going to be involved in whatever decision is made, and certainly they should have a voice in this discussion.

We have never approved, from a practical standpoint, any of the claims made by the pacifists. We believe in a strong defense. We did not believe in scrapping our navy. Whether our position is clear or not, it does not matter. We merely want to go on record this time as being opposed to many of the things that were done in the name of peace after the last war. However, if it seems wise, when the firing ceases, to require our seventeen- or eighteen-year old boys to spend a year or more in military or naval camps, and if the training that they will receive in those camps is very largely physical training and not purely military training, then we have a suggestion to make. It is this; that the army, navy and marine corps outline the kind of training that they feel our young boys should have, as looked upon solely from the military standpoint. If the schools and colleges can give that training, or part of the training, it would mean a great saving to the tax-payers and further, would permit the boys in question to continue with their education, while they are receiving the physical conditioning and toughening that have been shown necessary in this war.

Now then, our suggestion is that the military forces credit the educational institutions which demonstrate that they can, and will, do the job that the army, navy and marines want done. After designating, let us say, University "X," then it should be made known that any boy, who takes the work, thus approved, will receive credit for the same, and will not be required to spend twelve months in camp.

If it is thought necessary for these boys to have some special training in the military art alone, training that cannot be given by the educational institutions, then we suggest that these boys devote one summer of three months in camp doing this kind of work.

Certainly the schools and colleges are better

staffed to do physical training jobs than are the officers of the armed services. The reason why our physical training men and women have not done a more satisfactory job is because, for the most part, the educational authorities have not given them the opportunity. As we have suggested, these educational authorities have not seen to it that the non-athletic type of students followed physical training courses, because they failed to make such work compulsory.

Intercollegiate Athletics After the War

AT A meeting of the American College Publicity Association, held recently in Chicago, one period was devoted to a discussion of intercollegiate athletics after the war. Some of the points that were brought out in this discussion were the following.

First, it is natural to expect an increased interest and participation in sports including intercollegiate athletics after the war, because, following other wars, the American people have engaged in sports of various kinds in a big way. Therefore, it is reasonable to expect some kind of a boom in athletics after this war.

Perhaps, one reason why we turned to sports after World War I was because we were tired of war, and sports were in the nature of a change. This may reasonably be expected of our people after the present war.

After this war, certain organizations, that have already been set up, may be counted upon to promote and guide the development of athletics. Some of these are the following: the National Physical Fitness Committee, which was originated by the Government and, in a sense, represents the Government, is a potent factor in this whole question of physical fitness; the Athletic Institute, which has been set up for the purpose of aiding institutions and organizations that are interested in the development of all physical training activities, especially sports.

We have previously called attention to the fact that the schools and colleges, during the war, have stepped up their programs. They may be expected to continue with the war requirements, at least, for a time. We might hope that the educational institutions will not let down when the war ends, that is, let down so far as backing sports is concerned. But, here and there will be found a school superintendent, a school board, a college president, or a college faculty that will insist that athletics are not a part of education, and consequently, should not be supported by educators.

In another column, we have called attention to the fact that our general conditioning program, after the other war, was set up in terms of calisthenics and other formal activities. Sports and athletics, generally speaking, were not considered a part of the course that was designed to help make healthy bodies, and thus, credit was not given for participation in sports. With the failures of the past in mind, we may be expected to avoid making this mistake again. This means we will set up our physical training programs, after this war, in such a way as to include sports and athletics, and where credit requirements must be met, athletic participation will earn credits just as exercise on the apparatus will earn credits.

If these things develop along the line indicated, then certainly we will have a boom in athletics. In fact, it may be that certain people will attempt to exploit high school and college athletics, and excesses will creep in that will be very harmful to the development of a basic athletic program. The professional football leaders, according to the press, have abandoned their old rule which stipulated that they would not tamper with college men until these men had finished with their academic and athletic work in the colleges. If they follow this new plan, it will mean that the boys, who left college after having played only one or two years, will be offered financial inducements to sign up with the professional football interests. This will mean, in most cases, that these boys, if they accepted the offers, would not finish their college courses. The college men may be expected to combat this development by attempting to persuade the lads in question that it is to their advantage to finish their college work. This situation may lead to struggles over the athletes who are now in the service, and who, if there were no professional football leagues, would undoubtedly finish their college work after being discharged from the services.

At this meeting of the American College Publicity Association, attention was called to the work that has been done by Arthur L. Brandon of Vanderbilt University, who is a research vice president of the association, and who, with the help of his special committee, has conducted a number of studies. Reference was made to one phase of a study, which showed that all but two of the heads of twenty-two state universities stated that they expected a return to the same emphasis on intercollegiate athletics as there was before this world war. In this connection, there are a great many questions that should be answered regarding college athletics, and their future. Some of the colleges are now attempting to learn what per cent of the athletes were rejected for military service as 4-Fs. One leading university has already discovered that, from a survey of the letter men of the past four years, out of two hundred men, whose cases were reviewed, only seven were rejected as 4-F's. Secretary Knox at various times, has stated that approximately half of our men, examined for the service, were found to be physically unfit. An average of three and one-half per cent of the athletes rejected in the institution referred to above, means something. Perhaps we should carry studies, such as this and some others of similar character, further. The members of the American College Publicity Association will undoubtedly continue to do a constructive job in the matter of giving the public the facts about college athletics.

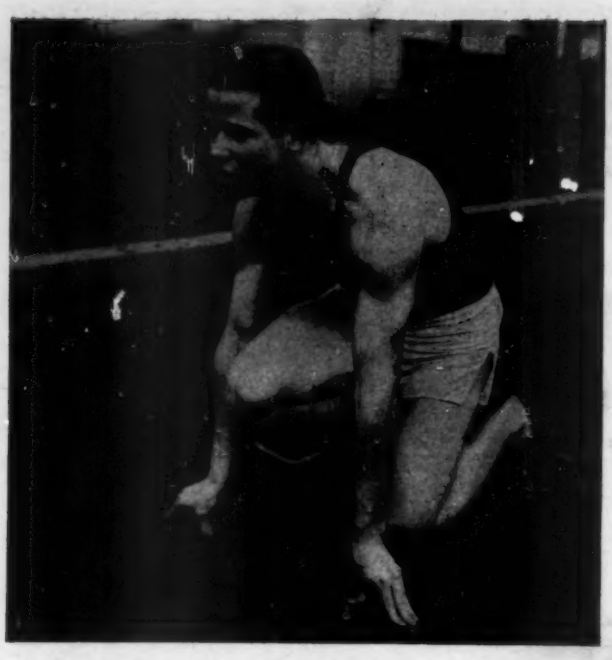


Illustration 1.

Hints For Coaching the Sprints

By Emil G. Schultz

Head Track Coach,

Township High School, Evanston, Illinois

Illustration 1.—On Your Mark—In this position the athlete is somewhat relaxed with one knee resting on the ground. Note that the arms are not locked at the elbows but are fairly straight, and almost perpendicular to the ground.

ON SEVERAL occasions during the past few months, I have heard mention of the shortage of trained track coaches, especially in the small high schools throughout the country. In this article, I shall endeavor to keep in mind the thought of helping the many new and inexperienced coaches who are now trying to carry on in track and field athletics for the duration. Since many of the trained coaches are now in the services, the job of coaching school track teams has squarely fallen into the laps of academic teachers, and it is my opinion that coaching hints will be greatly appreciated by that group.

In writing about sprinting, I shall attempt to touch on a number of important essentials which are necessary for success in this event. The selection of the athlete for this event, the teaching of fundamentals, and practice schedules are some topics which will be discussed here in detail.

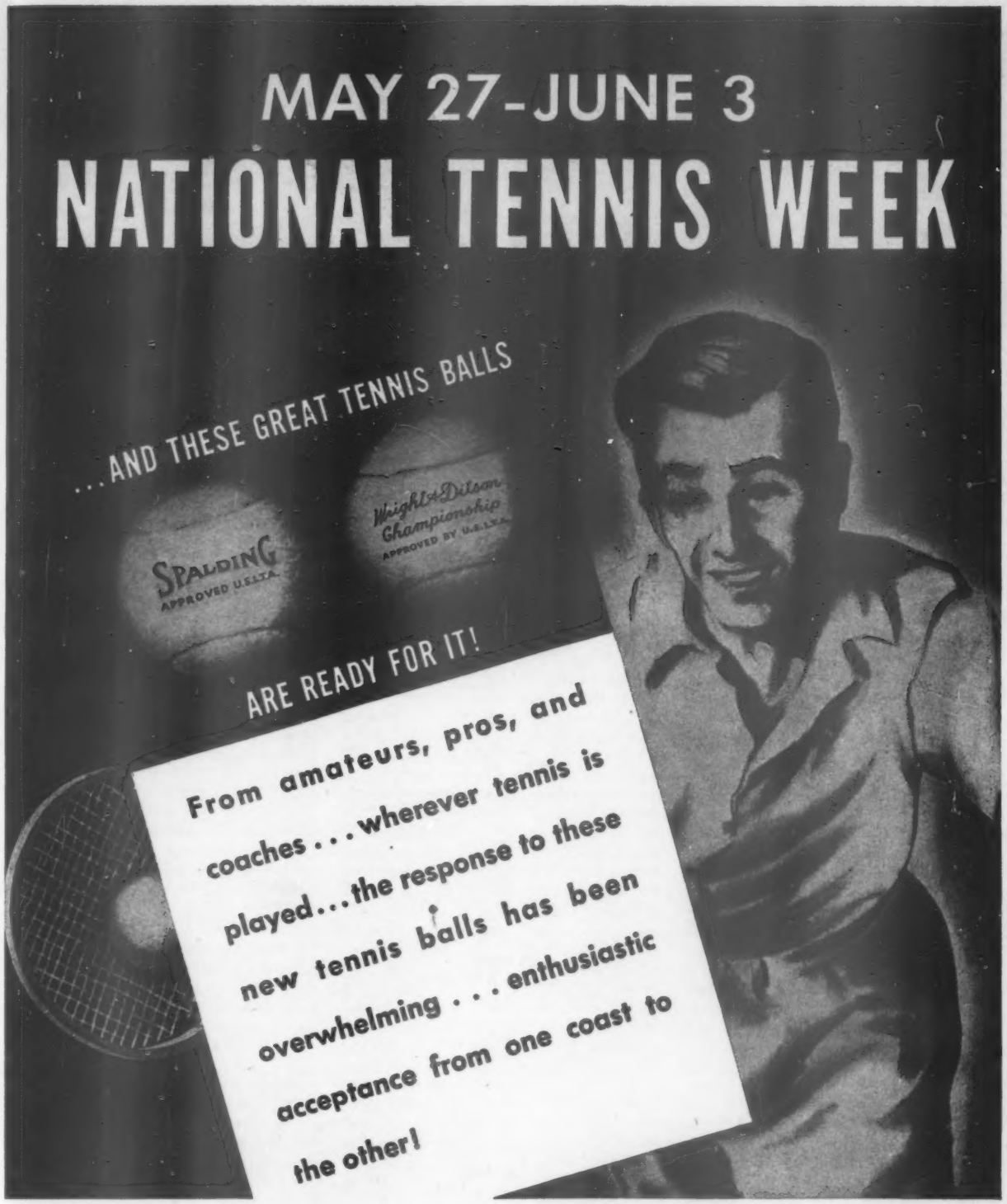
In selecting the sprinter, the coach should not attempt to adhere too closely to one type of build or physical constitution of the body. It is certain that the sprinter should be physically well developed and that he should possess powerful leg muscles. Two very important physical qualifications essential for best performance are quick reaction and speed. The dash is classed as an explosive type of event. Expressing the thought in another way, one may say that in the dash there is a maximum amount of exertion through quick reaction and speed in a very short period of time. In my coaching experiences I have, in general, found that the best sprinters possess certain characteristics, namely: keen interest, co-operative attitude, determination, a will to do, excellent training habits, and a real sense of sportsmanship. It becomes the coach's job to help bring out and develop the above-mentioned characteristics, and with their development will come the success for which the athlete is striving in this event. The coach should insist on a four weeks' pre-season training period which, for the main part, improves the physical condition of the athlete and prepares him for specific work on fundamentals. During the four weeks of the pre-season training period, however, the athlete should work on improving stride, leg action, arm action, head carriage, body lean while running, and endurance.

In the coaching of fundamentals, the first thing that presents itself is the start of the race. In short dashes a good start for some sprinters means everything, and to most of them, it is a very important part of the race. In order to develop an excellent start, the individual athlete must work scientifically and industriously on improving his technique. A small adjustment of the blocks or a slight movement of them with reference to the starting line may bring about a notable change in the initial action.

In general, with reference to the starting line, the blocks should be so placed that, when the athlete is on his mark, his arms should be in a position, almost perpendicular to the ground, when viewed from any direction. If there is a slight variation in the position of the arms, then the change would require a slight movement of the hands in an outward direction, thereby broadening the base in the front at the hands. It is not good practice to teach a narrow base at the hands or to extend the base in front of the shoulders. While in this *on-your-mark* position, the athlete should be more or less relaxed, with one knee resting on the ground and both knees in perfect alignment. The power-driving leg should be placed forward for maximum starting speed, and for better balance after the initial movement in the act of starting. The head should be held facing straight forward, but not too high so as to cramp the neck and shoulder muscles. The head, however, should be in such a position as to make possible a clear view of the lane directly in front of the starting line.

In the *get-set* position, there appears to be considerable variation in the forms used by the best sprinters. During my experience as a coach, I can not recall ever seeing a good start by an athlete who places his buttocks lower than the level of his shoulders when in a *set* position. For best practical results, we should start the experimenting with the buttocks of the athlete in the *set* position at a height which is on the same level as the shoulders. From here on the buttocks may be gradually raised to a point where the maximum efficiency in starting can be achieved. At this point I would like to inject two important thoughts in regard to the high and low stance in the *set* position. The athlete with the lower stance generally starts lower, and requires several more driving strides before he reaches his natural running lean. This is an advantage for some athletes, but for others it affords no gain. On the other hand, the competitor who starts with a higher position relies a great deal on a quick initial start by straightening out his body against a powerful leg drive. Due to powerful legs, the latter method has two dis-

MAY 27-JUNE 3
NATIONAL TENNIS WEEK


...AND THESE GREAT TENNIS BALLS
SPALDING
APPROVED U.S.L.T.A.
Wright & Ditson
Championship
APPROVED BY U.S.L.T.A.
ARE READY FOR IT!
From amateurs, pros, and coaches... wherever tennis is played... the response to these new tennis balls has been overwhelming... enthusiastic acceptance from one coast to the other!

Spalding Sets The Pace In Sports

A. G. SPALDING & BROS. ★ A. J. REACH, WRIGHT & DITSON

DIVISIONS OF SPALDING SALES CORPORATION

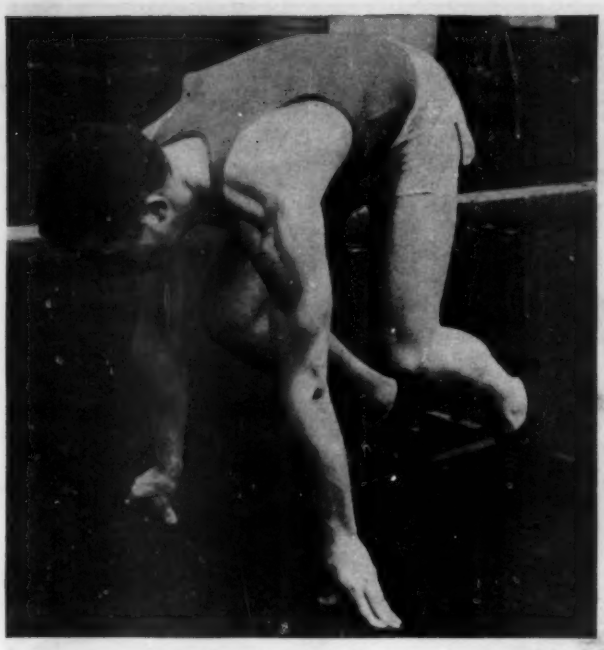


Illustration 2.—Get Set—Note that the buttocks are slightly higher than the shoulders. Certain types of athletes can use the higher stance to good advantage.

Illustration 3.—Go—Note the right arm coming up for the forward thrust and the body straightening out against very powerful legs. This type of start makes possible a longer driving stride. This athlete will reach his natural running lean quickly.

tinct advantages. The first is a longer driving stride immediately after the start, and the other is that the change from the driving to the pulling type of stride is reached from ten to twenty yards earlier in the race. The pulling type of stride is reached when the knees come up higher in front and the runner is employing his natural running lean. Now what happens when the gun is fired at the start? At the crack of the gun, the runner with quick reaction speed places the rear foot about fifteen to eighteen inches in front of the starting line. Simultaneously with the forward movement of the leg just referred to, the opposite arm and hand are thrust forward with considerable vigor, so as to assist the body in maintaining balance. Next, the power leg, or the fore leg in the block goes into action, executing a short, driving stride. With this action, the opposite arm and hand are thrust forward in the same manner as was described earlier for the other arm. In this vigorous arm movement there is a pull-back of the arm in front, a forward thrust of the other, and a precision-like motion continues throughout the entire race.

It appears that the most vigorous arm action occurs during the shorter driving strides just after the athlete leaves the starting blocks. The forward lean of the body at the start is very prominent for some athletes. A thirty-five degree angle between the body and the ground at the start shows that the athlete is using leg drive to move forward with speed. The gradual change from the driving stride to the natural running lean varies with the different types of sprinters. If I should attempt an estimate as to where the change occurs, the spot would fall somewhere between fifteen to twenty yards from the starting point.

In coaching sprinters, one should make every effort to eliminate side motion or wasted action. Bobbing or throwing the head from side to side and excessive shoulder movements are wasted action and they should, as far as possible, be eliminated. If the coach wants to go further in correcting possible lost action, he can stretch a string down on the ground after a run and check on the toe prints. If he finds toe prints on each side of the string, he can be quite certain that there is some lost motion. The perfect sprinter's toe prints, both left and right, fall on a straight line, thus indicating effortless and smooth performance. It should also be remembered that a sprinter runs only on his toes. Plenty of starting practice helps keep him on his toes. It appears that six to ten starts during three of the practice days each week produce the best results. In the starting practice, the athlete should avoid sudden stopping, because of the danger of straining leg muscles or turning an ankle.

Now for a few words on training schedules. The proposed schedules for track athletes may be very helpful in several ways. With a shortage of coaches in some schools, the schedules may serve to great advantage, or in case of a large squad, they may be used to keep many of the athletes busy while the coach is doing individual teaching. Beginners' schedules may be used for new candidates during the early conditioning work. While training schedules are a great help in coaching, there always comes a time when each individual competitor requires personal attention. A revision of schedules becomes necessary when an attempt is made to meet the particular needs of each competitor. If an athlete competes in both the 100- and 220-yard dashes, one training schedule is all that he requires.

Since all dash men on the squad are potential 880-yard relay runners, it seems logical that a 220-yard schedule would be the choice for all sprinters. A 440-yard dash practice schedule is presented here for the purpose of comparison. These suggested schedules are based on the assumption that a boy is somewhat along in his training, and not just beginning it.

440-Yard Dash

Always take plenty of time to loosen up. Take at least twenty minutes of calisthenics, emphasizing leg bending and those exercises stretching the large muscles of the abdominal region and the back. Then run a slow 300 yards to get loosened up. Walk around for a minute or so. Then run an easy warm-up 880, averaging around 2:40 or better. Take a start or two. This is a possible example of warming up.

Monday—Two 300-yard runs at about :37 each. Rest and walk around between each. Use smooth, even pace all the way.

Tuesday—Three 150-yard runs at :18

(Continued on page 29)

Illustration 1 shows the initial position of a shot putter in the back of the circle. His weight is on the ball of his right foot. His left leg is held loosely in readiness to swing forward, thus adding momentum to the forward hop on the right foot.

Illustration 2 shows the position of the feet on completion of the hop. The distance covered by the right foot in making this hop varies considerably with the individual, but measurements made of several leading shot putters have shown an average of thirty-nine inches traversed in this effort During the hop, the left leg has been swung straight ahead and the left foot planted some four inches to the left of the line of the right foot (See Illustration 6). As the left foot is planted, the left leg is stiffened and pressure is exerted against the ball of the left foot to force the left hip back and thus aid in driving the right hip forward in the important "hip-shift" or "shimmy." The right foot is in a position parallel to that which it assumed in the back of the circle before the hop. The weight is on the ball of the right foot.

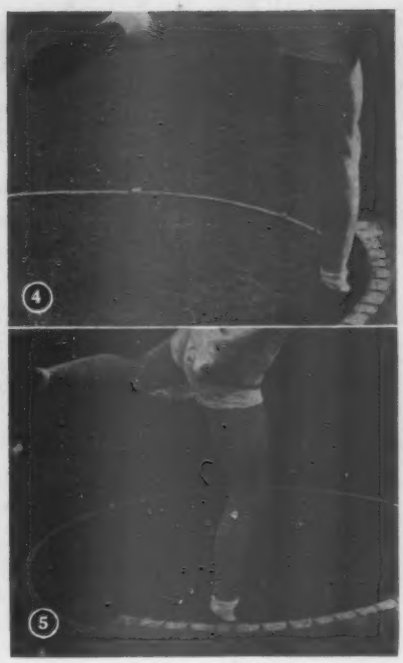


Illustration 3. Pivot of the right foot. The position of the feet in the ring is the same as that shown in Illustration 2. The right foot has been pivoted on its ball by turning the heel outward, to the right. The left heel has been turned inward, to the right, to a lesser degree. Pivoting the feet has made possible the fullest use of the driving power of the legs. This is the most important feature of footwork in the shot put. The "shimmy" or hip-shift, so much discussed, is a direct result of this pivoting of the right foot and the back pressure on the left leg. The shot is delivered to the accompaniment of the drive off the right leg from this position. The shot must be put while the right foot retains contact with the ground or much force will be wasted.

Illustration 4. The reverse. Having delivered the shot, the putter reverses the position of his feet in the ring, bringing the right foot close to the toe board. If the putter's drive has been directly behind the shot, his right toe will point in the direction of the throw. To mantain balance, the left leg is raised with the knee bent, and the putter hops on the ball of his right foot.

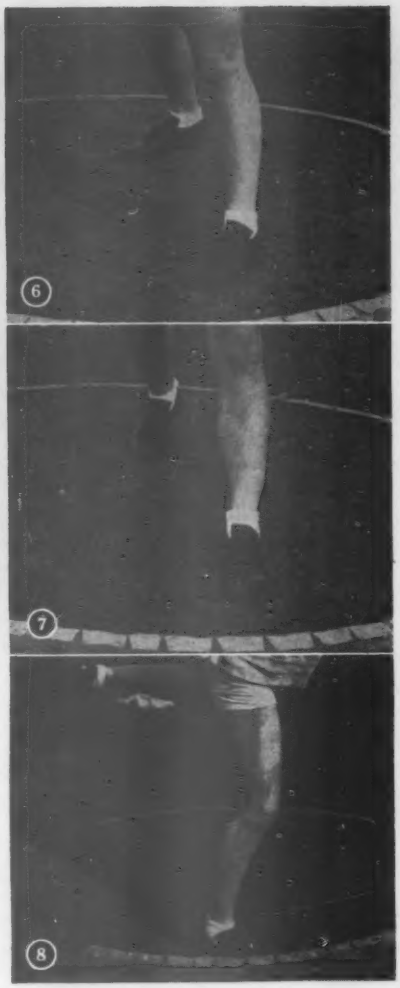


Illustration 5 shows an example of a poor finish of a reverse as the result of the putter not driving straight across behind the shot. The right foot is parallel to the toe board and thus at a right angle to the put instead of in the direction of the put. Compare with Illustration 4.

Illustration 6 shows the front view of the position shown in Illustration 2. Note the alignment of the feet.

Illustration 7 shows the front view of the position shown in Illustration 3. Note the foot pivot, especially of the right foot.

Illustration 8 shows the front view of the position shown in Illustration 4.

Here's Another Little Story on Footwork, to Keep You Advised That We're on the Job.

For Reprints of the Shot-Put Footwork, Write

JOHN T. RIDDELL, INC.

1259 N. WOOD STREET CHICAGO, ILLINOIS

A Five-Point Training Program For Distance Runners

By Ford A. Hess, C. Sp. (a) U.S.N.R.
V-12 Unit, University of Virginia, Charlottesville, Virginia
Formerly, Coach Garden City, Michigan, High School

THE purpose of this article is to present a training program or plan based upon the findings of such research in the physiology of activity as applies directly to distance running.

Simply to be able to run a mile is not the objective of the novice interested in distance running. He wants to run the mile in the fastest possible time, or at least fast enough to win or place in track meets. The only way to accomplish this is by training.

Training the organism to that point where it can sustain itself, while still engaging in strenuous activity, demands a high degree of integration of body functions.

There are limits established beyond which activity can not be continued. These may be climatic, such as high altitude, intense humidity, or sub-zero weather. There, also, may be limits which reside within the activity itself, that is, in the very nature of the activity such as its duration, frequency or speed.

A chain is no stronger than its weakest link. Regardless of what these environmental limiting factors may be, it is apparent that the weakness of the organism rather than its strength will determine to what extent these limits may be extended. This may seem paradoxical at first, however, but upon meditation it becomes apparent to achieve a high degree of integration of body function such as would be necessary in competitive distance running, it is imperative that the heart, lungs, kidneys, skin, and general body musculature be working harmoniously. One weak member will prevent this and the result will not be a successful endeavor. Therefore, a training program has a twofold duty to perform. It must first of all maintain those members that are strong, and then it must strengthen those members that are weak. The latter duty is the one most apt to be neglected.

This article proposes *five* cardinal factors as constituting the core of the distance runner's program. They are not considered in order of importance, rather, it is the purpose of this article to stress the importance of the integration of these five points into a well-rounded training program, based upon the physiology involved in distance running.

What is this quality and how can one train to develop it? This question is often asked by many a novice runner. Briefly, endurance refers to continued physical activity without suffering the distressing effects of fatigue. This is definitely necessary if one is to be a successful distance runner.

Endurance
(Pre-Season Training)

How can one train to develop this quality of endurance? The average high school boy has the quality of endurance to a degree. To compete successfully, however, in distance running, he must concern himself with establishing this quality as the foundation upon which will depend the success of his training.

The most efficient way to lay this ground work is by long distance jogging, two to three miles, twice a week during the early or pre-season training. It is during these jogs that the novice can experiment with many of his pet ideas. He can utilize this phase of training to concentrate on relaxation and rhythm, or to establish a healthy mental set toward his event and toward competition in general. He should feel the urge to break loose like a high-spirited race horse that is held in check by a tight rein. He should learn on these jaunts to relax, to breathe in rhythm to his stride or steps taken. These details will pay dividends in the regular season competition. These long jogs will toughen his feet and condition his leg muscles to the surface over which he will later train and compete.

Another detail upon which he should concentrate during these long jogs is that of deep inhalations, not for the purpose of increasing lung capacity, but rather as a stretching exercise for the intercostals or rib muscles and the diaphragm.

As he gradually overcomes any muscle soreness, he will at times find it desirable to utilize these distance jogs for short wind sprints of 100-200 yards with 440- to 880-yard jogs between each sprint. He should strive for relaxation at all times. When "turning off the power," he should slow down gradually, allowing the arms, hands, and even the fingers to hang limply and relaxed at the sides. When going into a sprint, he should utilize the arms as propelling forces, driving hard from the hips, so that the forward momentum tends to sustain itself as he slows down.

From the mental angle a common-sense view of fatigue should be observed. The warning signs should be heeded. These pre-season jogs, however, should never be intense enough to bring on the distressing symptoms of approaching fatigue.

How many weeks should this pre-season training continue? Generally speaking, it should continue at least six weeks, preferably eight and out of doors unless zero or inclement weather decrees otherwise. The factor of irregularity cannot be stressed too much in this pre-season training period. A distance runner should form the habit of getting a 2- to 3-mile workout at least twice a week.

What sort of topography should be selected for these distance jogs? Preferably an area having some hills, but with more level stretches, thus enabling him to approach a steady rate at various times along the way. The hills will tend to break the monotony, as well as furnish a resistance to be overcome, thus providing an adequate momentary tax on the musculature and respiratory organs, causing them to develop an efficiency in an attempt to overcome the resistance.

Pace
(In-Season Training)

Inasmuch as the distance to be run in competition constitutes what we term here as distance running, it is logical to assume that all pace work should be directed with a view toward approaching the maximum pace to be carried throughout the distance of that race.

Thus, with the pre-season endurance training, the novice runner is now ready to concentrate his energies over a given distance at a definite pace. Here is the time when his weak points will manifest themselves and here then is the time when the coach can determine the amount and kind of work to prescribe. Likewise, the boy himself will know where he is weak and can utilize his energies to overcome his weaknesses.

Assuming that the distance to be run in competition is one mile and that creditable time for the first meet would be five minutes, we may work out a pace chart based upon quarters. Thus, arbitrarily breaking the distance into four quarters, it may easily be observed that to run a mile in five minutes, it would be

Continuing The Roster of Coaches in Service

OKINS, EMERY E., Lieut. (j.g.), Navy.
Basketball Coach, University of Delaware.

ALLEN, GEORGE, Lieut., Navy.
Football Coach, University of Maine.

ARCLAY, RALPH E., Lieut., Navy.
Track Coach, Western Illinois State Teachers College (Macomb, Illinois).

ATTISTA, JULIUS, 1st Lieut., Air Forces.
Asst. Football Coach, University of Florida.

OSTON, C. E., Captain, Army.
Asst. Football Coach, Harvard University.

RADLEY, PAUL, Lieut. (j.g.), Navy.
Asst. Football Coach, University of Colo.

ROWN, PAUL E., Lieut. (j.g.), Navy.
Football Coach, Ohio State University.

CHAMBLESS, W. H., 1st Lieut., Army.
Asst. Football Coach, Alabama Polytechnic Institute.

CHROUSER, H. C., Lieut., Navy.
Football Coach, Wheaton College.

CLARK, L. W., Lieut., Navy.
Asst. Football Coach, Harvard University.

COCHRAN, ARTHUR M., Lieut. (j.g.), Navy.
Basketball Coach, Tufts College.

DAUER, VICTOR, Lieut., Army.
Football Coach, Valparaiso University.

DONELS, R. O., Lieut., Navy.
Football Coach, Iowa State College.

DYE, WILLIAM H., "Tippy" Ensign, Navy.
Asst. Football and Basketball Coach, Ohio State University.

EIKEN, MALCOLM S., Ensign, Navy.
Football Coach, Northeast Missouri State Teachers College (Kirksville, Missouri).

ELDER, MAURICE, Ensign, Navy.
Baseball Coach, Colorado State College of Agriculture and Mechanic Arts.

ELVERSON, LEWIS H., Lieut. (j.g.), Navy.
Football Coach, Swarthmore College.

ERICKSON, RALPH, Captain, Army Air Forces.
Basketball Coach, Trinity College (Hartford, Connecticut).

FEHRING, W. P., Ensign, Navy.
Asst. Football Coach, Purdue University.

FELDHAUS, William, Ensign, Navy.
Asst. Football Coach, Indiana University.

FERGUSON, BRUCE E., Captain, Army.
Asst. Football Coach, Western Maryland College.

FRINK, FRED, Captain, Marines.
Asst. Football Coach, University of Miami.

GARDNER, GEORGE L., Captain, Army.
Asst. Athletic Director, Indiana University.

GARDNER, JOSEPH T., Lieut. (j.g.), Navy.
Basketball Coach, Georgetown University.

HAMILTON, BRUTUS, Captain, Army Air Forces.
Track Coach, University of California (Berkeley, California).

HARDING, JOHN, Lieut., Navy.
Football Coach, University of Miami.

★ HARGESHEIMER, WALTER G., Pfc., Marines.
Football Coach, Massachusetts State College (Amherst, Mass.).

★ HARRIS, C. P., Lieut. (j.g.), Navy.
Basketball Coach, State Teachers College (Cape Girardeau, Missouri).

★ HASS, WALTER, Lieut. (j.g.), Navy.
Football Coach, Carleton College.

★ HAVENS, CHARLES, Captain, Army Air Forces.
Football Coach, Western Maryland College.

★ HERWIG, BOB, 2nd Lieut., Marines.
Asst. Football Coach, University of California (Berkeley, California).

★ HITCHCOCK, JIM, Lieut. (j.g.), Navy.
Baseball Coach, Alabama Polytechnic Institute.

★ HOLLINGSWORTH, LLOYD, Ensign, Navy.
Football Coach, Gustavus Adolphus College (St. Peter, Minnesota).

★ HUNT, JOEL, Captain, Army.
Asst. Football Coach, Louisiana State University.

★ JENSEN, LOUIS, Lieut. (j.g.), Navy.
Basketball Coach, Gorham Normal School (Gorham, Maine).

★ JORDAN, L. P., Lieut., Navy.
Football Coach, Amherst College.

★ JORDAN, RALPH, Captain, Army.
Basketball Coach, Alabama Polytechnic Institute.

★ KELLOGG, ROBERT, Ensign, Navy.
Baseball Coach, Tulane University.

★ KINNAN, R. M., Lieut. (j.g.), Navy.
Basketball Coach, Washington University (St. Louis, Missouri).

★ LOEBS, FRANK, Lieut., Navy.
Football Coach, Washington University (St. Louis, Missouri).

★ McCOLLUM, F. G., Major, Army.
Asst. Football Coach, Alabama Polytechnic Institute.

★ McCREARY, A. M., Captain, Army.
Director of Athletics, Arizona State College (Flagstaff, Arizona).

★ McDONALD, LORA, Major, Army.
Asst. Football Coach, Colorado State College of A. & M. Arts.

★ MAHER, CHARLES, Lieut., Navy.
Baseball Coach, Western Michigan College (Kalamazoo, Michigan).

★ MARTIN, W. S., Lieut. (j.g.), Navy.
Baseball Coach, University of Delaware.

★ MEAGHER, JACK, Lieut. Comdr., Navy.
Football Coach, Alabama Polytechnic Institute.

★ MESSIKOMER, E. L., Lieut., Navy.
Basketball Coach, Temple University.

★ MILLER, R. K., Lieut., Coast Guard.
Basketball Coach, Wilmington College.

★ MILLNER, WAYNE, Lieut. (j.g.), Navy.
Asst. Football Coach, University of Notre Dame.

★ MORSE, MILTON B., Lieut. (j.g.), Navy.
Asst. Football Coach, University of Ariz.

★ NELSON, DELBERT, Lieut. (j.g.), Navy.
Basketball Coach, Wheaton College.

★ NOLEN, RAY, Captain, Army.
Asst. Football Coach, Louisiana State University.

★ NULF, R. W., Lieut. (j.g.), Navy.
Football Coach, Kalamazoo College.

★ O'BOYLE, THOMAS, Ensign, Navy.
Asst. Football Coach, Tulane University.

★ OLDS, L. W., Lieut. Comdr., Navy.
Track Coach, Michigan Normal College (Ypsilanti, Michigan).

★ OLMSTEAD, JOHN, Ensign, Navy.
Asst. Football Coach, University of Wichita.

★ OLSON, OLIVER, Lieut., Navy.
Football Coach, Macalester College (St. Paul, Minn.).

★ ORMSBY, BOB, Lieut., Marines.
Asst. Basketball Coach, University of Southern California (Los Angeles, California).

★ OWEN, JAMES T., Lieut. (j.g.), Navy.
Asst. Football Coach, Louisiana State University.

★ PETERS, MARTY, Lieut., Navy.
Football Coach, St. Benedict's College (Atchison, Kansas).

★ POMEROT, EARL, Lieut. (j.g.), Navy.
Asst. Football Coach, Arizona State College (Tempe, Arizona).

★ PRENTUP, FRANK, Lieut. (j.g.), Navy.
Asst. Football Coach, University of Colo.

★ REUSS, ROBERT, Lieut., Navy.
Basketball Coach, University of Cincinnati.

★ ROBINSON, G. E., Lieut. (j.g.), Navy.
Asst. Football Coach, Monmouth College.

★ SALTER, ELMER, Captain, Army.
Asst. Basketball Coach, Alabama Polytechnic Institute.

★ SIMMONS, FIELDING, Lieut. (j.g.), Navy.
Asst. Football Coach, Williams College.

★ STOBBS, T. W., Lieut., Navy.
Football Coach, Wittenberg College.

★ STRUCK, EDWIN, Captain, Army Air Forces.
Asst. Football Coach, Illinois State Normal University (Normal, Illinois).

★ SUDDUTH, SOLON B., Lieut., Navy.
Basketball Coach, State Teachers College (Livingston, Alabama).

★ TIMERARIO, C. A., Lieut., Navy.
Asst. Football Coach, Indiana University.

★ TWOGOOD, FORREST F., Lieut., Navy.
Basketball Coach, University of San Francisco.

★ TYSSELING, RICHARD, Lieut. (j.g.), Navy.
Head Coach, Central College (Pella, Iowa).

★ VAN WINKLE, WALTER, Lieut., Navy.
Basketball Coach, Miami University.

★ WALKER, HILMAN, Ensign, Navy.
Football Coach, Arizona State College (Tempe, Arizona).

★ YEAGER, JAMES, Lieut. (j.g.), Navy.
Football Coach, University of Colorado.

This roster represents a partial list of coaches now in the service. The first of this list appeared in the January, 1943, issue. Additional names will be printed in subsequent issues. Witchell-Sheill Company, 1635 Augusta Boulevard, Chicago.

Copyright, 1944, Witchell-Sheill Company

necessary to average one minute and fifteen seconds for each quarter mile. The pace then, as arbitrarily established would be seventy-five seconds for each quarter mile. The novice may now go ahead and with adequate warm-up see how near to seventy-five seconds he can come in running one quarter. Gradually, as he senses the pace of seventy-five seconds for the quarter, he can run over the half-mile distance attempting it in two minutes and thirty seconds. If he goes through this with apparent ease, he should proceed to the three-quarter mile and finally the full distance at five minutes.

Before leaving this discussion, it must be understood that along with the workout just described, he is to have continued his endurance work, having cut the distance down to one and a half miles once a week. On these jogs, he should keep up the wind sprints as well as the steady pace for half to three quarters of a mile. The early part of the week, Monday or Tuesday, is preferable for the endurance workout.

If, after his first competitive race or time trial, it is apparent that the runner is ready to work on a faster pace the new pace chart may be made up in a manner similar to the former. The new pace may be arbitrarily established for a 4:50 mile or 72.5 seconds for each quarter. He should proceed as in the former workouts, thus continually boosting the pace when he shows evidence of being able to maintain it. This will definitely establish pace judgment in his running strategy and prevent his being led out or held back. It will always afford him the confidence of knowing that he is running well within himself, as the saying goes. It tends also to eliminate the discouragement that comes when an inexperienced runner fades out or has too much running left at the end of the race. Many a good prospective distance runner has been discouraged by a faulty-paced race.

Form
(Balance of Tensions)

Gunder Haegg, the great Swedish distance runner, creates the impression that he is gliding, so smooth is his every movement. Not all runners can hope to imitate this performer, although it is necessary that each man perfect his form to a point where unnecessary movements and undue tension are eliminated.

In stressing form, the coach should not attempt to change the runner's natural habits unless they reveal stark irregularities which interfere with mechanical efficiency. The body carriage in distance running should be inclined slightly forward, the head parallel to the ground, the eyes focused a few feet ahead and on the surface. In indoor running, where footing is assured, it is advisable for the runner to focus his eyes along the top rail, three to five feet ahead. The arms and hands should be carried off the hip in a relaxed manner. There are some coaches who feel that the manner in which the leg is brought back, whether high or low, tends to denote form. From the mechanical point of view the lower foot is raised both off the ground and out or back prior to the next forward extension, the less work is placed upon the lifting muscles. From this we may conclude that a low, more or less shifting gait, with the foot just skimming the ground would tend to be advisable for distance running.

Unnecessary movements are wasted movements. Inasmuch as the momentum to be carried is always forward, any side motion such as cross-swinging arms or legs is a sign of poor form. Likewise, stretching or over striding is as bad a fault as chopping the stride.

If a runner thinks that his stride can be lengthened, a good way to test whether or not it is mechanically possible and still maintain efficiency is to experiment by the trial-and-error method over a given distance, using time as the criterion for evaluating his findings. The coach should observe the runner to check for signs of tension as he uses a shorter or longer stride. The thing for a runner to remember in regard to stride is that the efficiency with which his leg muscles respond to work rather than how long or how short a stride he takes, determines what is good form for a particular individual. The fact that John Woodruff, Olympic 800-meter champ in 1936, took a nine-foot stride whereas Greg Rice, America's ace distance runner, strides considerably less is no reason for the latter to believe he could be a better runner if he had a longer stride. Each is efficient at his particular stride.

Speed

The factor of speed in the training program for distance runners is looked upon by some coaches as more important than the endurance or pace factors. The fact that a man can run a quarter mile in 50 seconds is no indication that, by slowing down to 70 seconds, he can run a mile faster than the man who is capable only of a 60-second quarter. Strictly speaking, a speed exercise is characterized by the factor of frequency. The rapidity with which the stimuli occur makes it impossible for the muscles to recover as long as the exercise is in progress. Endurance exercises are characterized by the factor of duration. The stimuli occur at a less rapid rate, but can be continued for a longer period of time, due to the fact that the muscles involved can recover sufficiently between each successive stimulus.

When we attempt to increase a man's speed, we are really attempting to reduce the viscosity of the muscles involved. Is this possible? Schneider says, "The chief factor limiting the speed of movements is the viscosity of the muscles."* He also states, "It is now recognized that the quickest acting muscles of the body are the least efficient when it comes to exerting a force over a long period of time."**

How does this compare with training for endurance? The fact that the sprinting ability of a man is determined or predetermined by the viscosity of the muscles leaves little that can actually be done by way of training as far as increasing the potential muscular ability. What can be done by way of training will be the developing of the mechanics of sprinting form in other words.

Respiration and circulation are factors that influence the recovery period after sprinting. In distance running respiration and circulation are potent factors in determining a man's ability to maintain a fixed pace over a given distance.

Rhythm

This is the integrating factor. It is this phase of training that can co-ordinate all the various factors involved in the effort of distance running. Rhythm makes for efficiency. The man must sense this unity of body functions. Rhythm is the antithesis of tension.

Although rhythm has been recognized by coaches and runners and has been written into training programs, as yet no definite method indicating how to train so as to achieve rhythm has been advanced.

True, rhythm is something one must sense and, therefore, an individual pattern must be established. It thus appears difficult to advance a general method whereby it can be taught. Conformity is still very much a trait of human endeavor. The music that is written by man is sung by man. It is that to which he dances, and also that to which he marches in parades. The pattern that establishes the rhythm to our martial music is sensed by the man as he marches along. It provides a pattern for him to conform to and thus rhythm of a whole regiment becomes the rhythm of each man.

It is necessary to establish a pattern if rhythm is to become a tangible factor in training for distance running. Such a pattern may be established by utilizing the natural rhythmical phases of respiration, inhalation and exhalation, and coordinating these with the steps or strides taken. For example, inhale on counts one and two, exhale on counts three and four. A continual repetition of this establishes a definite rhythm that can be easily sensed by the individual. The arms and shoulders also fall into this conformity. Re-

(Continued on page 29)

* *Schneider, Edward C., Physiology of Muscular Activity. W. B. Saunders Co. 1941 Philadelphia, Pa. Page 37.*

** *Same as above, page 51.*

Today's KANTLEEK* BLADDERS have an important plus feature!

THEY HOLD AIR LONGER

Today's KANTLEEK* BLADDERS will stand up as well as any we've ever made! They have all the stamina—all the lively playing qualities of our pre-war bladders. In addition, they have a powerful, new feature—THEY HOLD AIR LONGER. Because the remarkable new synthetic of which they're made is firmer-grained, less porous than natural rubber. The war has changed our material, but it hasn't changed* our standard of quality. Be sure you get patented KANTLEEK* BLADDERS, equipped with KANTLEEK* PATENTED VALVES. They have no metal or mechanical parts. When you get a KANTLEEK* BLADDER today, you're still getting the bladder that's best!

*Patented

The SEAMLESS SR RUBBER Company

NEW HAVEN CONN. U S A

FINE RUBBER GOODS SINCE 1877

CONVERSE-DUNKEL

BASKETBALL SUMMARY

Salutes Top Hoop Teams

HERE are the nation's top ten basketball aggregations for 1943-1944, as shown by end-of-season ratings of the nationally famous Dick Dunkel Basketball Forecast and Rating System. This unique System, which covered the basketball fortunes of 534 College and Service Teams this season, surpassed its own eight-year accuracy record of 79.2 by being *80.9 percent right* in forecasting — in advance — winners of this season's court contests.

COACHES AND ATHLETIC DIRECTORS of Civilian and Service Teams!

If you haven't received your free copy of the complete Converse-Dunkel Basketball Summary for 1943-1944 . . . showing final ratings of 534 College and Service Teams . . . write for it today! Please give name of school or service unit and your own title when writing. Address:

Basketball Division
Converse Rubber Company
Malden 48, Mass.

5 Leading SERVICE TEAMS

81.9

79.0

CAMP GRANT

ST. MARY'S PRE-FLIGHT

NORFOLK N. A. S.

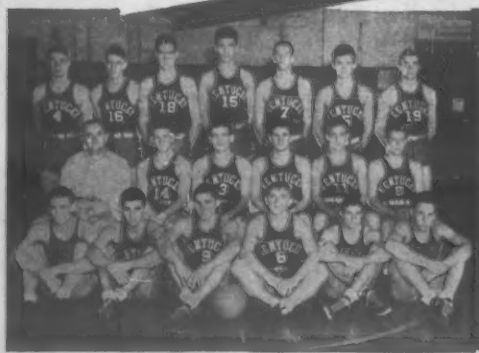
5 Leading COLLEGE TEAMS

76.9

(ARMY) WEST POINT

74.3

UNIV. OF UTAH



73.5

UNIV. OF KENTUCKY

72.3

DE PAUL UNIV.

72.2

WESTERN MICHIGAN COLLEGE

They've got what it takes to Win!

CONVERSE ALL STAR

Chuck Taylor

BASKETBALL SHOES

CONVERSE RUBBER COMPANY . . MALDEN 48, Massachusetts

Medart
ST. LOUIS
MISSOURI
MEDART BUILDS AMERICANS
America's foremost manufacturers of gymnasium apparatus, physical fitness equipment, physio-therapy apparatus and gymnasium mats for all purposes.
FRED MEDART MANUFACTURING CO.
3535 DeKalb St. • St. Louis, Mo.

THIS IS THE WAY--

to Combat Athlete's Foot

Dolge Alta-Co Powder—one pound dissolved in each gallon of water in strategically placed foot tubs—is a sure, speedy, safe way to combat the spread of Athlete's Foot.

Alta-Co Powder is stable in solution and kills all twelve species of Athlete's Foot fungi and their hardy spores. It is speedy—it does its work in less than sixty seconds. It is safe, because it is non-irritating to the skin.

Patented Alta-Co Powder is easy and economical to use. The strength of the solution can be checked at a glance with the inexpensive ($1.00) Alta-Co Tester. Further, Alta-Co Powder does not damage towels nor give off harsh draggy fumes. You can purchase Alta-Co Powder in quantity, and it is always ready to use—it does not lose power in storage.

Alta-Co Powder has been tested in laboratory and clinic by medical authorities, and is now in use in schools and universities throughout the country. Verbatim copies of Alta-Co Powder performance reports sent to responsible persons on request.

For scientific Athlete's Foot control

DOLGE

Alta-Co POWDER

The C. B. DOLGE Co.
Westport, Connecticut

The "Maker of Champions"

tells what he has learned in

33 years as a track coach—

There is probably no one better fitted to write on the technique and personalities in the track and field world than Dean Cromwell, for 33 years track and field coach at the University of Southern California. In that time over one hundred championship trophies for team and individual have been gained by Cromwell-coached athletes. You've heard of many of them—Fred Kelly, Charley Paddock, Bud Houser, Frank Wykoff, Kenneth Carpenter, Earle Meadows, and many others.

In this book, he sets down his vast store of cinder-path knowledge, gained from a study of athletes in action rather than from following orthodox methods.

CHAMPIONSHIP TECHNIQUE IN TRACK AND FIELD

By Dean B. Cromwell
Head Track and Field Coach
University of Southern California
In Collaboration with Al Wesson

315 pages, 6x9, illustrated, $3.00

In this book Cromwell tells all—how to recognize in the raw, young Freshman a potential pole vaulter, distance runner, sprinter, high jumper or weight thrower; how to train gradually so as to have the athlete in best form at the time of competition. Here is valuable "dope" for the coach who wants to develop new abilities in his men; for the athlete looking for ways of improving his skill and for the fan who seeks greater understanding and appreciation of the sport of track and field.

Order a copy from

THE ATHLETIC JOURNAL
6858 Glenwood Ave.
Chicago 26, Illinois

Teaching and Analyzing High Jumpers

(Continued from page 11)

reduced for several days afterwards.

10. Side-step before jumping. This bad habit often develops in beginners. It throws the jumper *into* the bar instead of *up*. For corrections, watch from behind the jumper. The correction is to make *walking* approaches at low height. Walk straight in and jump. Then jog. Then run. If the error recurs, start all over again.

11. Landing head first. This is caused by leaning to the left at the take-off, or by failure to kick vigorously. Emphasize the left-arm swing and the right-leg kick. Practice "addressing" the bar, using a straight lift, head up.

12. Landing hard on the stomach. This is caused by neglecting to bring the left foot forward and down after clearing the bar. Practice at low heights until corrected.

Face-down Modification of the Western Roll

The only essential differences that a jumper needs to master when he shifts from the western roll to the barrel, belly, or straddle variation are the layout and the landing. The ideal approach, take-off point, and kick are exactly the same. Illustration 5 shows the ideal layout. Illustration 4 shows what happens when the ideal is not quite attained. The trailing leg hooks the bar, usually at the knee. This is the worst problem of the face-down roll, and will be discussed later more in detail.

When you first start a jumper on the barrel roll, lower the bar to one foot and begin as though he had never jumped before. Tell him to swing the outside leg up exactly as in the western roll, trying to go *straight up*. Convince him that *after* he reaches the peak of his jump he swings the right leg over and down for a right-foot landing. Get him to avoid the natural tendency, which is to roll *too* far and land on his back. This tendency to roll too soon is what makes the modified western roll so difficult, for a too-early roll spoils the kick-up, making it a sideswipe that throws the body *at* the bar instead of *up* and *over* it. A secondary result of a too-early roll is that the trailing leg is pulled against the crossbar before there is time to kick it out of the way.

As soon as he beginner can kick up and over the one-foot height with the proper kick and landing, proceed with the approach, take-off, and layout, exactly as in the standard western roll.

In teaching the layout, you will find some boys who tend to keep the left knee

bent and get tangled with the crossbar. It usually helps to put them on the edge of a bench or tables as in Illustration 5 and show the position of the face, arms, and legs. Tell them to swing the left leg *behind* the right one immediately upon leaving the ground, so that when the body twist is made at the peak of the jump it will not be necessary to *kick* the left leg at all, but just to *push* it upward smoothly as the left hip rolls *up* and away from the bar. When this action is properly done it is a smooth and graceful performance. When it is done perfectly, only the belt buckle will ever touch the crossbar. I think that Les Steers came closer to perfecting this action than anyone I have observed either in actual jumping or in pictures.

In using the modified roll, no jumper will do his best until he learns to use an almost vertical take-off, because the complete roll of the body takes more time than the part turn used in the western roll. Unless the jumper uses this time, his body will strike into the bar before he reaches his peak. Many jumpers experience the exasperation of lifting their bodies well above the bar but knocking the bar with the trailing leg because they do not have time to whip it out of the way.

Some jumpers attempt to correct this fault by jumping from the front. This alteration sometimes gives them more time to clear the trailing leg, but does not correct the original fault—the failure to lift straight into the blue.

Others try to correct the difficulty by approaching almost parallel to the bar, thus gaining more time by riding *along* the bar while they clear their legs. Again they invite trouble, because they are in danger of hitting the bar with the shoulder, or of coming down *on* the bar before getting beyond it. The ideal angle of approach seems to be somewhere between thirty and forty-five degrees. I like forty-five degrees.

The faults that show up in the modified roll, and their corrections, are mainly the same as those given for the western roll. The modifications necessary in clearing the trailing leg have already been discussed.

If a jumper has trouble in rolling too far over when he lands in the pit, have him try consciously to turn his head to the right as he crosses the bar and reach for the ground with his right foot and right hand. Some good jumpers have learned to land in this way without jarring the breath out of their bodies. Tell them to try to get the clearance by twisting their hips rather than by turning the whole body.

Practice Methods

Jumpers need very careful warm-ups. After a minimum of one mile of jogging, there should be a complete set of exercises to stretch and loosen every muscle of

BROOKS

MANUFACTURERS OF THE *Finest* LEATHER TOP BASKET BALL SHOES ★

Our Basketball Shoes, with their rugged scientific construction make them ideal foot health shoes for a great variety of sport.

We are making these popular shoes for Physical Training in the Armed Forces. We are also taking care of limited demands from our dealers on the Home Front.

Please anticipate your requirements far in advance to allow us adequate time to serve you.

Place your orders thru our dealers NOW!

FAMOUS BROOKS BASKETBALL SHOES

for Colleges, Professionals, High Schools are made in several models, featuring

- Form Fitting Tongue
- Cushion Heels
- Scientific Arch Support
- Thick Resilient Rubber Soles

BROOKS SHOE MFG. CO.

58TH AND MARKET STS. PHILADELPHIA PA.

INDIANA BASKETBALL COACHING SCHOOL

AUGUST 28-29-30, 1944

Ray Meyer
Coach, De Paul University

Dolph Stanley
Coach, Taylorville, Illinois, High School
State Champions, 1944

Royner Greene
Coach, Middletown, Ohio, High School
State Champions, 1944

Floyd Baker
Coach, Martins Ferry, Ohio, High School
Finalists in Ohio Tourney

Lieutenant E. N. Case
Frankfort, Indiana, High School's
Great Coach

A GOOD STAFF OF WINNING COACHES

TUITION $10.00

FOR COMPLETE INFORMATION WRITE

CLIFF WELLS—BERRY BOWL—LOGANSPORT—INDIANA

Kahnfast
QUALITY FABRICS

Coaches Everywhere Nominate

5222 Kahnfast's NEW FIGHTING TWILL

For Longer Lasting Uniforms

Now in 5222 you get a staunch fabric noteworthy for its durability under the roughing of tough sports schedules. Colors are White, Scarlet, Black, Kelly Green, Royal Blue, Gold, Maroon. See your regular dealer, or write any of the leading uniform makers listed:

CALIFURZE, INC., San Francisco, Calif.
FELCO ATHLETIC WEAR, New York
FELT NOVELTY MFG. CO., New York
GENERAL ATHLETIC PRODUCTS CO., Greenville, O.
THE P. GOLDSMITH SONS, INC., Cincinnati, O.
LOWE & CAMPBELL
MARSHALL CLOTHING MFG. CO., Butler, Ind.
OLIVER BROTHERS, Philadelphia, Pa.
RAWLINGS MFG. CO., St. Louis, Mo.
WILSON ATHLETIC GOODS MFG. CO., Chicago, Ill.

ARTHUR KAHN CO., Inc., 444 FOURTH AVE., N. Y.

TORO
Power Mowers
ALL OVER THE WORLD
TORO MANUFACTURING CORP'N.
MINNEAPOLIS, MINN.
MOWING MACHINERY SPECIALISTS FOR OVER 20 YEARS

the body. The muscles most frequently injured in jumping are the back muscles. Next in frequency are the thigh muscles. Therefore the most important exercises are back bends and twists, and knee bends. To stretch the hamstring muscles do front body bends with the knees straight until the jumper can place his hands flat on the ground. High kicks are also important. All the exercises suggested are necessary.

Following the exercises it is a good policy to "address the bar" a few times. This is done by making a regular approach *easily* and leaping vertically *without* attempting to clear the bar. The jumper should land within a few inches of his take-off point. This exercise helps in getting the balance and position for a vertical lift.

A good psychological trick is to put the bar up to 6 feet 6 inches and have the jumper do some vertical leaps to see how high he can lift his head above the bar. After this exercise, the height of 5 feet 10 inches does not seem so high. This little trick helps to eliminate the mental hazard of a high crossbar, and is also good exercise.

A jumper should always do six or eight easy jumps at very low heights before trying for height.

In early season it is wise to do a great amount of jumping at low heights to perfect the form, and much jogging and sprinting for leg-building. A jumper should not try for height the first three weeks, and after that he should do his height trials only once a week.

When the competitive season starts, the jumper should do some easy form jumping about Tuesday of each week, and do a great amount of running on Monday and Tuesday. On Wednesday the work-out should consist only of light jogging, and on Thursday and Friday he should do no more than warm up. He should avoid being on his feet for any length of time. What he needs is to feel an exuberance of energy, lightness, and spring on the day of competition. He needs a keen edge both mentally and physically. Lack of sleep is fatal.

In competition the jumper should be warmed up and ready when his turn comes, with his approach, starting point, and take-off point thoroughly worked out beforehand. It isn't fair for jumpers to waste time and play the prima donna during competition. The wastage of time draws out the event until all the competitors are tired and get worse records than when everybody is prompt.

When a jumper faces the bar for his trial, he should be cool and collected, but thoroughly determined. All his training and practice are going into an effort that will take three or four seconds from start to finish. In his brain should be a clear picture of what he intends to do, a picture of himself *clearing* the bar. Confidence is essential, for no jumper will clear a height if he thinks he cannot.

Hints for Coaching the Sprints

(Continued from page 18)

or better. Make each of these fast, even sprints. Emphasize arm and leg action, lost body motion.

Wednesday—Over-distance work, four continuous laps. Strong finish.

Thursday—Practice starts or 50-yard sprints, at lease six each. One 220-yard run at :25 or better. Smooth, even running, not pouring it all out at the end.

Friday—Light warm-up if race is on Saturday. If not, two 300-yard runs. Fast, hard running, but not necessarily, with the watch, or a time trial of 440 yards.

Saturday—Race or lay-off or take a little walk.

Sunday—Lay-off or take a little walk.

This schedule, of course, should be varied and would have to be varied, if there were to be a race during the week. Never have a stiff workout the day before a race.

220-Yard Dash

Plenty of loosening-up and calisthenics required before doing any hard sprinting. Warm-ups of the same variety as for the 440, with plenty of leg bending, stretching and knee-raising exercises.

Monday—Two 300-yard runs, over distance. Good, steady, even running, with good finish.

Tuesday—Three 150 yard runs, in :17 or better. Work on starts.

Wednesday—Work on starts or 50-yard sprints, at least six each. Rest a bit. Take a few more warm-up calisthenics. Then take two laps—easy strides, strong finish.

Thursday—Two 220-yard runs, in :24 or better. Take a couple of easy laps, with good finish. Work on starts.

Friday—Light warm-up if race is on Saturday. If not, two 100-yard sprints. Do not give these everything you have. Rest a bit; jog a little Then take a brisk 440, in about :56 or :57, at least under :60.

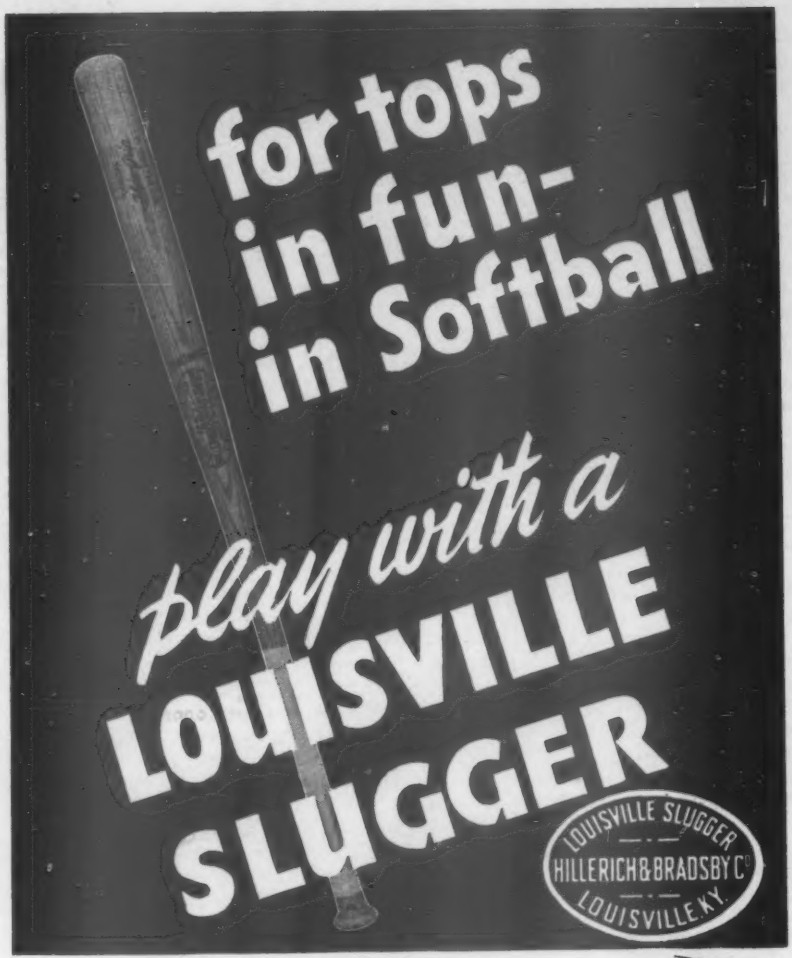
Saturday—Race—complete lay-off, or a walk.

Sunday—Lay-off, or take a walk.

A Five-Point Training Program for Distance Runners

(Continued from page 22)

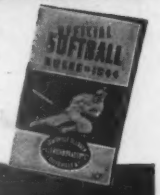
gardless of the pace, the rhythm remains the same. Its tempo, however, is increased as the oxygen need is increased. With continued training this rhythm becomes as fixed for distance running as normal uncontrolled breathing is for the resting state. The efficiency that results from the rhythmic stimuli is evidenced in the ease of continuous effort.



That feeling of confidence, when your softball hitters step up to the plate with a Louisville Slugger, is one of those intangible but important things that makes champions. It always pays to play with the best!

"Official Softball Rules for 1944" is ready now. Write us for enough free copies to supply your teams. Please address

Dept. AJ, Hillerich and Bradsby Co., Inc., Louisville 2, Ky.



Louisville SLUGGER BATS
FOR SOFTBALL & BASEBALL

1—Handles are quality built, doubled, sewed and riveted to the side walls, and reinforced. 2—Square built up side walls. 3—Thick resilient layer felt fillers (made of hair by the platten process which guarantees freedom from broken steel punching needles). 4—Hand tufted at 6" intervals with heavy waxed twine triple tied for permanence. 5—Strong long fibre cotton canvas covers—You deserve this quality in your mats. Sold direct to you with satisfaction guaranteed. Send for catalog.

NATIONAL SPORTS EQUIPMENT CO.
364 MARQUETTE . . . FOND DU LAC, WISCONSIN

Learning to Be an Infielder

(Continued from page 13)

the infield side of the bag and your left foot within the infield with the toe about on line with the heel of your left foot (Diagram 12). Keep your body low and hands extended if you are expecting a throw. If you are not expecting a throw, rest them on your knees.

As the pitcher starts his motion, move off the bag into your fielding position. If there is a possibility of a squeeze play, you must go in fast toward home plate.

Helpful Suggestions:

1. Be ready to cover a base when the play calls for it. Keep in mind that every base must be covered on every play.
2. Be in position to cover your base before the pitch.
3. As first baseman, practice shifting to take throws on either side without crossing your legs.
4. As second baseman, take your position on the infield side of the bag to take a throw from the catcher.
5. First and third basemen also take positions on the infield side of the bag when taking throws from the catcher to their respective bases.
6. When acting as pivot-man on a double play, second to first base, step out of line with the runner to make the throw to first base.
7. When in motion on such a play, try to hit the bag with the right foot.
8. As pivot-man, remember to make the put-out at second, before attempting to complete the double play.
9. As an infielder, you should avoid straddling the bag and should take your position either in front of, or to the side of, the bag, depending upon the play. The exception to this is the pivot-man at second base.
10. An important part of your job in covering your base, when a runner is rounding your bag on a long hit or other play which gives him a chance to advance, is to watch carefully to see that he touches the bag. If he fails to touch it, call for the ball, tag the base, and call the umpire's attention to it.

Playing Position

With the variety of situations that occur in any ball game, a player learns from his coach, and by experience, how to play his position under the different circumstances that arise. As a schoolboy infielder, you must be alert to follow the instructions of your coach and to understand the reason why you should shift your position or cover certain territory on different plays. Here are some general principles that you should follow:

1. Covering territory. Each infielder should go after every grounder he can reach. This means that on slow hits the first and third basemen may handle grounders that might also be handled by the second baseman or shortstop. As an infielder never hesitate to try for any grounder within your reach.

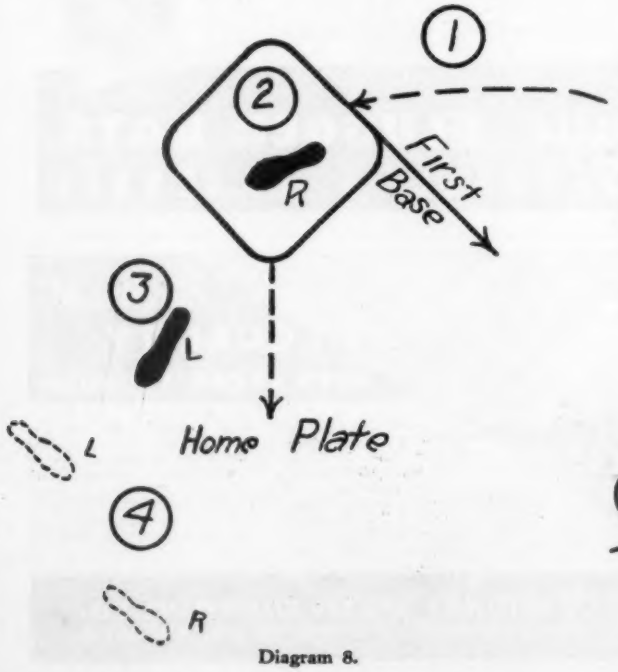
On fly balls the responsibility of covering territory must be divided. The first infielder to call for a fly ball should take it. If you go after a fly, call "I have it," loudly and repeatedly. When your team mate calls for a fly, you should call, "Take it."

The second baseman should take fly balls that fall back of first, and the shortstop should take flies that fall back of third. They should have the right of way on these plays.

When an outfielder and an infielder both start for a fly ball, the outfielder should have the right of way if he can reach it.

2. Covering and backing up bases. Keep in mind the thought that every base should be covered on every play. The primary responsibility of covering each base rests with the baseman. The second baseman has the added responsibility of covering first base whenever the first baseman is playing a bunt and the shortstop must cover second base or third base whenever these bases are left uncovered. The shortstop must also cover second base whenever the ball is hit back to the pitcher. The pitcher must cover first when the first baseman goes after a batted ball.

You must keep in mind that it is almost as important to back up a base as it is to cover it. Be careful not to get too close to the base when backing it up. To be in the most effective position, you should be about ten steps behind the baseman. The general rule you should follow is to back up the man next to you every time that he handles the ball and you do not. Specifically, the first baseman backs



Double Play to First Base. Second Baseman (Diagram 8). 1. Run in a curve toward the base. 2. Hit the bag with the right foot. 3. Step into the infield with the left foot. 4. Make the throw, the feet being on a line with first base.

The Shortstop. 1. Run in a curve toward the base. 2. Hit the base with the right foot and hop into throwing position on the outfield side. 3. Throw, your feet being on a line with first base.

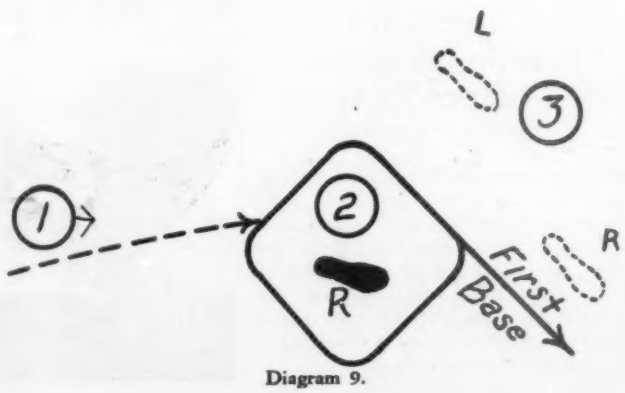


Diagram 8.

Diagram 9.

LOOKIT, GANG, A BASEBALL OUTFIT — NOW ALL WE GOTTA DO IS CLEAR OURSELVES A DIAMOND AND WE'LL SHOW THOSE MARINES HOW THE NATIONAL GAME IS PLAYED!

Excerpts from a letter written by Sgt. W. H. (Izzy) Smith, a Goldsmith salesman, now with the armed forces in New Guinea to R. W. Scallan, Sales Manager of The P. Goldsmith Sons, Inc.

Dear Dick:

Remember my writing you about the baseball diamond we cleared out of the jungle in New Guinea? In four days we were playing on it and at present it is almost as good as the diamonds back home. . . . There were so many teams that it (the field) was limited to battalion teams only with a time limit of one hour and a half per game. By the way, we played with the favorite ball of the soldiers here in New Guinea, the good old Goldsmith Official League No. 97. . . . It is hard to estimate the value of this field. It is worth ten times the man hours it took to build it. . . . It has boosted the morale one hundred per cent. Night softball, touch ball and track meets are also on the program for the future. . . . This is a mighty good spot to come to rest up for the second half of the game with the Japs in the near future.

(Signed) IZZY

Remember, if athletic equipment is not available to you, it is doing double duty on the home front, the high seas and every far-flung outpost of the world.

GoldSmith
Preferred
TRADE MARK
SPORTS EQUIPMENT
CINCINNATI 14, OHIO, U.S.A.

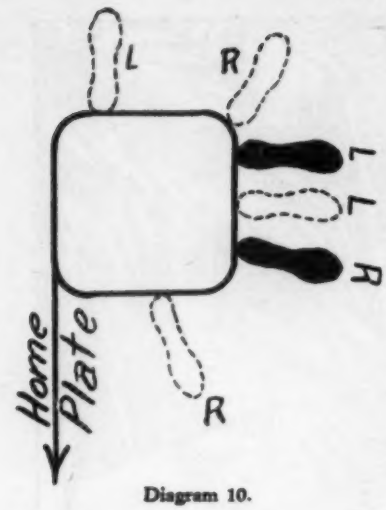


Diagram 10.

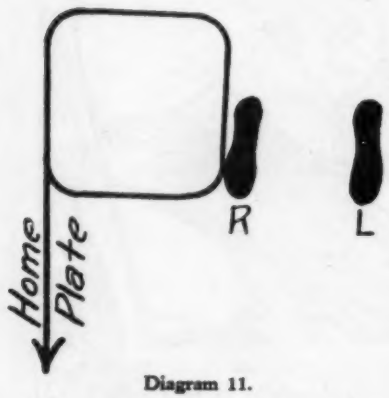


Diagram 11.

up the catcher; the second baseman backs up both first and second; the shortstop backs up second and third, and the pitcher backs up third.

3. Relaying throws. As a shortstop or second baseman, you must be prepared to relay throws from the outfield on long hits. If the ball is hit deep into the outfield on your side of the diamond, go out fast to take the throw from the outfielder. This first throw should be the short one. You are the player who should make the long throw and you should make it with a full overarm motion and throw so that the ball will hop once.

4. Shifting. You must shift your position: (a) According to your ability to throw; (b) According to the batter; (c) According to the play. There are so many complications which enter into how and where you should take your position that it may seem bewildering, but it should simplify things if you will keep the following facts in mind.

a. According to Your Ability to Throw. In locating your position on the diamond the most important factor is your ability to throw. You should be conservative about this and underestimate rather than overestimate your throwing ability. As shown in Diagram 13, the first baseman plays twenty-five, the second baseman thirty and the shortstop thirty-five feet back of the base line. If any player is a poor thrower, he should move closer to the line. For instance, it would be far better for the shortstop to play fifteen feet back of the line and be able to make the throw to first than it would be to play deeper and be uncertain in his throwing. Make sure of your throw first and then play as deep as it will allow you.

When you come in to play close, the reason for this is to cut a run off at home plate. If you are an exceptionally strong thrower you might, in this case, play just in front of the base line, but the average schoolboy infielder needs to come well up inside the base lines to make good his throw to home plate. It is better to be in too close than out too far. When you move in to make the play at home, be sure you come in far enough to enable you to make the throw to the plate easily.

b. According to the Batter. You can judge quite well how to play each batter

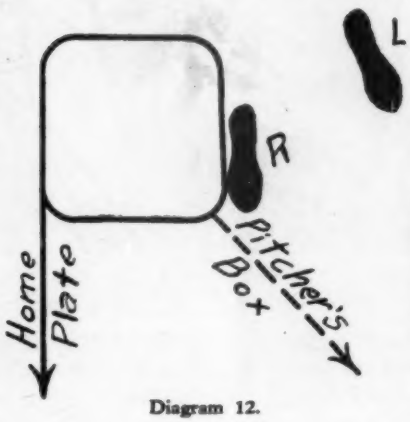


Diagram 12.

if you try to size him up and remember what he has done on previous trips to the plate. Shift in, or out, or over, to be in the best position to protect the point toward which you expect him to hit. Against left-handed hitters, the third baseman and shortstop move in a few steps while the first and second basemen play deeper and a little more to the left.

c. According to the Play. You should plan what to do before each pitch and be prepared to make the play when the ball leaves the pitcher's hand. The first step in making a play properly is to be in position to make it when the ball is pitched. For example, if you are the second baseman, there is a runner on first and you expect a steal, you could not make the play properly from your normal fielding position. You must move to a point close to the base line before the ball is pitched, and from this point you can cover the bag in time to take the throw.

You will not get caught out of position, if you check with your team mates on every play, and know exactly where the throw is to be made and who is to protect your base.

5. Run-Downs. If a runner is caught between bases, each infielder who has him trapped should immediately be backed up by a second infielder. If possible, always force the runner back toward the base from whence he came. Use a short forearm feint to throw as you advance toward him, then as you throw, pass him on the right, go on around and back up the play from the other side. The player who has been backing you up will then be in a position to continue the run-down in your place. This shuttling of players will prevent the mix-up that so often occurs.

6. Regulations. Here are a few regulations that every infielder should know in

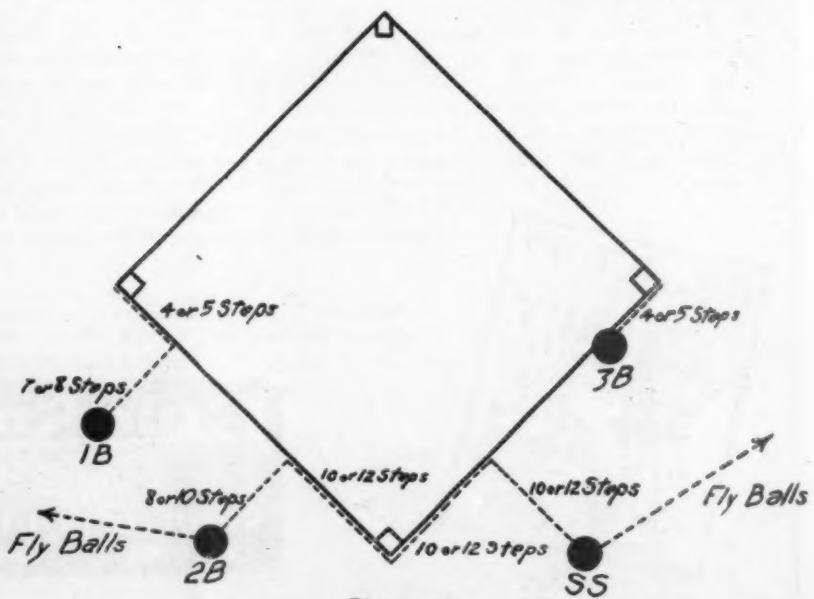
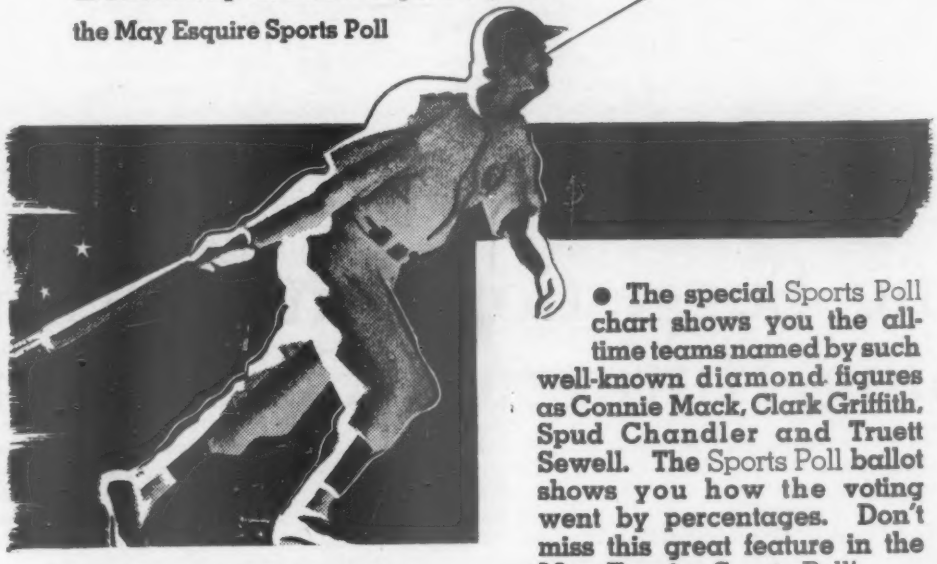


Diagram 13.

DON'T MISS IT!

Baseball's All-time Team

as selected by the nation's sports experts in the May Esquire Sports Poll



● **The special** Sports Poll **chart shows you the all-time teams named by such well-known diamond figures as Connie Mack, Clark Griffith, Spud Chandler and Truett Sewell. The** Sports Poll **ballot shows you how the voting went by percentages. Don't miss this great feature in the May Esquire** Sports Poll!

● **Straight from the experts—the sportswriters and sportscasters of the country, and the top-notch men of baseball—comes the Esquire** Sports Poll's **selection of the nine greatest players in baseball history. Check their selections with your own for an all-time nine. Read their reasons for naming these men baseball's all-time greats.**

Former umpire Billy Evans selects BASEBALL'S GREATEST UMPIRES in **The Umpire Is Seldom Wrong**

There may be times when you've thought the only good umpires were the dead ones . . . but in their ranks are some of baseball's greatest men. Read Billy Evans' article **The Umpire Is Seldom Wrong** in the May issue of Esquire!

page 88

page 97

Peddling hot-dogs to cheering fans for more than half a century, the Stevens concessions have become top caterers at all big sporting events. Read **Rise of the Hot Dog Dynasty** . . . the story of how Harry Stevens made peanuts and popcorn pay off . . . in the May Esquire.

page 64

NOW ON SALE

Esquire the leading general magazine on sports

order to make the play properly:

1. Infield Fly. The batter is automatically out and baserunners are not forced to advance if the batter hits a fly ball that can be handled by an infielder with less than two out and both first and second bases occupied, or bases full. Remember that there must be less than two out and that both first and second bases must be occupied. Keep in mind that there is no play on the batter, but you might have one on any runner, should he attempt to advance.

2. Third Strike. The batter is out on a dropped third strike with a runner on first unless two are out. Keep in mind that, when there are less than two out, there need be no play on the batter when a third strike is called because he is out. There may be a play on the runner, who may attempt to advance. Often on this play the batter will start for first in an attempt to draw the throw there, and allow the runner to advance. Play the runner but, also, remember that the rule is effective only when there are less than two outs. *The third strike and infield fly rules are not effective when there are two outs.*

3. Two Runners on the Same Base. The runner who first occupies a base is entitled to it. When two runners occupy the same base, and the second runner has not been forced to advance, you should tag the second runner to make the put-out. Of course the first runner may be put out if he leaves the base.

4. As an infielder you have the right of way, if you are trying to field a batted ball. If you have the ball in hand to touch the runner, he is not entitled to the base and you may block his way. Unless you have the ball in hand, or are attempting to field a batted ball, you are not allowed to obstruct the runner.

5. Do not be so foolish as to throw your glove at a batted or thrown ball because, if you hit the ball with your glove, the runner or runners will be entitled to three bases on a batted ball and two on one that was thrown.

6. If the runner is obliged to return to a base while the ball is in play and fails to touch each intervening base in reverse order, he may be put out by a fielder touching the base or the runner. You must make this play, and claim the out before the pitcher delivers the ball. Keep in mind, also, on a long hit when the runner is advancing and fails to touch a base, that you must touch the base, or the runner, with the ball in your possession and appeal to the umpire before the pitcher delivers the ball.

7. The baserunner, in going to first base "may overrun or overslide said base after touching it in passing without liability to be put out for being off said base, provided he return at once and touch the base." He may turn either to the right or left, but if he makes any attempt to run to second base before returning, he forfeits this exemption and if he makes an apparent attempt and then tries to return to first, he should be tagged.

8. Baserunners are obliged to "tag-up" after a fly has been caught. A baserunner who holds his base on a fly ball may advance the moment the ball is touched by a fielder. If the runner is off his base, when the ball is caught, you may put him out by tagging him, or the base, before he gets back to it. Watch to see that he does not leave the base too soon. If he does, touch him or the base and appeal to the umpire. You must be sure to do this before the pitcher delivers the ball to the batter.

Specific Suggestions on Catching, Pitching, Hitting and Outfield Play

MANY requests have reached us for back copies containing the articles written by J. E. Gargan on pitching, catching, hitting and outfield play. Since the supply of these copies has been exhausted with the exception of the May, 1943, issue, we are reprinting the specific suggestions supplied in each article.

Illustration 1.

Illustration 1. Schoolboy Rowe, now at Great Lakes, formerly of Detroit baseball fame shows how to drive hard off the pitcher's rubber after a long stride. Note a bend in the left leg which permits a complete follow-through to the position shown in the next picture.

These articles appeared in the following issues, Pitching—April, 1938, page 7, and May, 1938, page 11; Catching—March, 1939, page 8; Hitting—April, 1941, page 7; Outfield Play—May, 1943, page 8. If these articles are available in the school libraries, it is suggested that coaches refer to them as only the summaries are reprinted. Copies are available only of the May, 1943, issue—Outfield Play, and the April, 1944, issue, the first part of the article on Play of the Infielder, concluded in this issue.

The illustrations in this issue are official U. S. Navy photographs of prominent players on this year's Great Lakes Naval Training Center team.

PITCHING

Pitching to the Batter

1. Emphasize the overhand motion. Learn to pitch the ball, not merely to throw it.

2. Practice the various stances until they feel comfortable.

3. Work to eliminate faults in the delivery and to acquire a smooth motion.

4. First acquire the ability to throw strikes down the middle at will; then learn to throw high and low; and finally learn to control your curve ball.

5. Form the habit of using the rosin bag.

6. Shift about on the rubber if you are having trouble with your control.

7. Keep the holes filled.

8. Do not pitch with a defective ball.

9. Concentrate on the target as you start your delivery. Do not look toward the runner at this moment.

10. Be sure your catcher is standing directly behind the plate.

11. Do not put everything you have

Illustration 2.

Illustration 2 shows a full and free delivery, Rowe well balanced and about to assume a good terminating position. Note the complete swing of the right arm and follow-up of the right leg.

HOTEL SHERMAN

ATHLETIC HEADQUARTERS IN CHICAGO

PLEASE NOTE

- **EVERY MONDAY**
  Junior Association of Commerce
- **EVERY TUESDAY**
  Rotary Club Luncheon
- **EVERY WEDNESDAY**
  Shriners' Luncheon Club
- **EVERY THURSDAY**
  Central Lions Luncheon
  Kiwanis Club Luncheon
- **EVERY FRIDAY**
  Executives' Club Luncheon

1700 ROOMS 1700 BATHS *from* $2.75

- **Ideal headquarters for your teams, whenever they come to Chicago.**
- **Exceptionally comfortable beds with extra long sizes specially for big men.**
- **Special "training menus" gladly arranged.**
- **Convenient to all transportation and places of amusement.**
- **Home of the College Inn, featuring, always, a nationally famous orchestra.**

CLARK • LAKE • RANDOLPH AND LA SALLE STREETS

C·H·I·C·A·G·O

THE ANNUAL MEETING O

The annual meeting of the Athletic Institute was held at the Yale Club, New York City, April 24, 1944. All of the directors were in attendance except the following who are in the service. Lt. Colonel Frank G. McCormick, Captain Glenn Morris, and Lt. Commander Charles E. Forsythe.

The directors reviewed the work of the Institute for the past year, accepted the reports of the different officers, including the Treasurer's report, and accepted the recommendation of the Executive and Finance Committee. This Committee recommended that the Institute for this year continue its aid to:

1. The Industrial Recreation Association, which is devoted to the task of increasing recreation in the defense factories.
2. The support of the Industrial Recreation Research Professorship.
3. Industrial Recreation Research Professorship travel expense.
4. Service Sports Clip Sheet.
5. American Legion Community Athletics.
6. The War Memorial Foundation.
7. An educational campaign designed to present factual information regarding athletics.

The officers and directors of the Institute in a series of talks and discussions indicated their pleasure in that they have been able to assist in the war work by aiding organizations that are committed to the task of developing and carrying on activities which are making a definite contribution to the war effort.

THE ATHLETIC INSTITUTE, INC.

THE ATHLETIC INSTITUTE

The following officers and directors were elected for the coming year:

John L. Griffith, President
G. H. Hamacher, Secretary-Treasurer
C. P. Binner, Brunswick Balke Collender Company
H. L. Chaillaux, National Americanism Commission, American Legion
W. C. Cowen, P. Goldsmith Sons Company
Fred deBeer, J. deBeer & Sons Company
Charles M. Evans, President National Sporting Goods Assn.
John B. Goldenberg, Brooks Shoe Manufacturing Company
Ed Hawes, H. Harwood & Sons
L. B. Icely, Wilson Sporting Goods Co.
Dr. Frank S. Lloyd, Executive Director, Physical Fitness Division, Office for Emergency Management
Thomas Lynch, Ivory System
C. F. Robbins, A. G. Spalding & Bros.
John T. Rodgers, Hillerich & Bradsby Co.
L. W. St. John, Athletic Director, Ohio State University
Mason Scudder, Rawlings Manufacturing Company
K. L. "Tug" Wilson, Athletic Director, Northwestern University
Fielding H. Yost, University of Michigan

Members in Service

Lt. Commander C. E. Forsythe
Lt. Colonel Frank G. McCormick
Captain Glenn Morris

09 SOUTH STATE STREET, CHICAGO

Illustration 3.

Illustration 4.

Illustration 5.

Illustrations 3 and 4 of Virgil Trucks, a Detroit pitcher now in the service, shows good form at the stride position of a delivery. Medium lever action of the leg and body is shown with good balance. The ball is well concealed and the eyes are intently focused on the pitching target.

Illustration 5, a sequence to Illustrations 3 and 4, shows a good follow-through with the right leg being brought forward to assume a proper terminating and fielding position.

into every pitch. Save energy for the late innings, and for the pinch.

12. Do not talk to opposing players or pay attention to their comments or to those of the spectators.

13. Expect the umpire to call a few bad ones.

14. Use the curve ball sparingly, about one in every four pitches.

15. With a man on third, make sure that the catcher's return is a short throw.

16. Take the signals from a point a step behind the rubber.

17. Keep the ball concealed from the batter.

Fielding

1. Before you pitch, be sure you know where you are to make the play if the ball comes to you.

2. Keep your body low, gloved hand in front, and eyes on the ball after delivering it.

3. Consider yourself as the short-fielder on all balls near enough to handle, and as an extra infielder on all other plays.

4. Start toward first base on all balls hit to your left.

5. When backing up a base, do not line up too close to the baseman. Be prepared to back up any base.

6. When taking a fly ball, call out, "I have it."

7. When you are on the rubber and a runner starts to steal before you have started your delivery, step back off the rubber with the right foot (right-hander) before you throw to catch the runner.

8. With a runner on third, be sure that he has not started for home before you make the play to first base.

9. Do not take your position in the box until you are sure that your team mates are in their proper positions.

CATCHING

Stance

1. When giving signals, do not spread your knees wider than is necessary for the second baseman and shortstop to see the signs.

2. Learn to jump into receiving position after giving your sign. This takes practice, is not easy at first, but once the movement is learned, you will find it quick and easy.

3. With your right foot turned out at a 45-degree angle, it is easier to pivot for your throw.

4. Don't spread your feet wide; it makes shifting slower and more difficult.

5. For the same reason don't get your weight back on your heels.

6. Keep low and spread out to offer a good target. If you are low, you can handle low pitches more easily and go up after high ones. On the other hand, if your stance is too high, you may have difficulty in going after low balls. It is easier also, to shift quickly with the weight low.

7. Many experienced catchers always hold the hand low and flash the gloved hand to indicate the spot of the pitch. We want you to hold both hands steady at the spot, to offer your pitcher a steady target to aid his control.

8. Don't close your fist. A relaxed bare hand is less likely to injury from foul tips and helps you handle the ball more easily.

9. Practice your stance constantly. In early season indoors, give your sign and shift to your receiving stance before each pitch. The pitcher will be throwing nothing but straight balls, but you need to follow this routine until it becomes a habit.

Receiving

1. It is important to take your stance as close to the batter as possible, because this position is safer, helps your pitcher's control, and places you closer to the bases for throwing or to the infield for fielding. There is an exception to this; if you expect to make a throw to third, move back to avoid the batter when making your throw.

2. If you watch the ball from under the batter's swing, you will not be bothered by it.

3. Don't underestimate the importance of watching the flight of the ball all the way into your glove. If you form the habit of losing sight of it, you will never make a reliable catcher.

4. Be careful not to tip the bat.

5. Practice shifting indoors in early season as you practice your stance. This is the place and time to learn it.

6. Form the habit in early season practice of catching the ball with both hands. Don't fall into the practice of catching with the mitt hand only.

7. Unless you practice shifting in front of every ball in early season, you will fall into bad habits.

8. Keep your forearms and wrists relaxed so that they give with the impact of the ball.

9. Along with your shift, practice pivoting into throwing position as you receive the ball.

10. If the ball is coming into the dirt at your feet and there is a runner on second or on third, drop to both knees in front of it.

11. Jump into position if you find yourself off balance and unable to pivot into your throwing stance.

12. Never duck or turn your head on

foul balls. The mask offers ample protection if you keep it in front.

HITTING

How to Hold the Bat

1. Hold the bat with your hands together.
2. Never bat with crossed hands.
3. Keep your wrists straight.
4. Do not spread your elbows too wide. It will cause you to cock your wrists.
5. Do not cock your wrists.
6. Your elbows should be well out from your body.
7. At the time the bat meets the ball, the wrist and forearm of your top hand should form a straight line directly behind the bat.
8. To avoid clenching your hands unconsciously, practice relaxing them as you start your swing.
9. Always hold the trademark up.

How to Stand

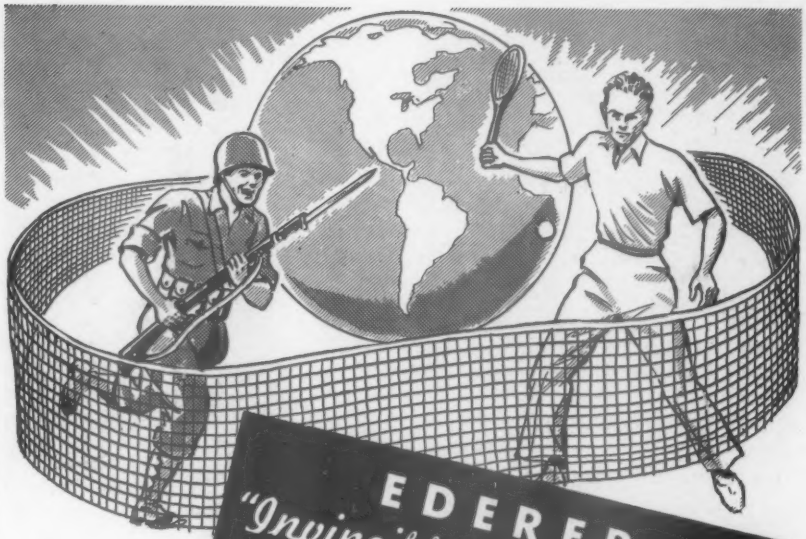
1. Stand upright with the front foot pointing toward the pitcher (step stance).
2. Be well-balanced, with most of your weight on the rear foot (step stance).
3. Be relaxed, with your elbows well out from your body.
4. Avoid any twisting, turning or bending of the body that cause poor balance or tension.
5. If you step away, try facing the pitcher or take a set stance.

Where to Stand

1. The batter's box is large enough to allow you to vary your position in the box.
2. Do not crowd the plate. Stand far enough back so that when you swing your bat, the end reaches a little beyond the farthest corner of the plate.
3. Start from the point opposite the plate and try different places in the box until you find your best spot.
4. Vary your position to fit the circumstances of the game.
5. Vary your position to meet different types of pitching.

Running to First Base

1. If you bat right handed, take the first step with your right foot.
2. Look for the white line and follow it. Do not watch the ball.
3. Take short digging steps at the start like those of a sprinter coming off his mark.
4. Run for a point three or four yards beyond the bag.
5. Run all the way through each time.
6. Try to run across the bag with your regular stride. Stretching or leaping will slow you up.



EDERER "Invincible" Sports Nets ARE HELPING OUR BOYS TO VICTORY!

The Army-Navy "E" flag which proudly flies over our plant, the first such recognition given to any company in our industry by U. S. Engineers, shows our determination to fulfill our contracts and keep our resolution to work for Victory.

THE hazards of modern war are lessened by physical fitness. INVINCIBLE sports nets are helping our boys to victory by maintaining that physical fitness through recreational sports. INVINCIBLES give them the relaxation and relief from tension they need after the heat of combat, and the boys are kept in prime condition by their participation in sports. The strong, sturdy, durable INVINCIBLE nets you cannot obtain now are in the service of our country doing their part toward keeping our men the best fighters in the world. In the jungles, on the desert, in the icy wastes of the Aleutians, and in training camps at home, INVINCIBLE nets are guarding the safety of their physical welfare. When peace comes, Ederer INVINCIBLES will again take their place at the top of the sports net parade and will be obtainable from your dealer.

R. J. EDERER COMPANY
"Invincible" Sports Nets
Home Office: 540 Orleans St. Chicago, Ill.

PETERSEN GYM MATS

Used in Schools, Colleges, Army Bases and Naval Stations coast-to-coast. Full line wrestling, boxing, tumbling mats and foot-ball dummies. Send for catalog and prices.

PETERSEN & CO.
5561 BAYNTON STREET
PHILADELPHIA 44 PA.

PETCO TRADE MARK

AERIAL TENNIS ★

Excellent for schools, playgrounds and military training camps. Played indoors or out. Singles court 20'x50'. Doubles court 26'x50'.
A game of skill. NOT A TOY. Economical because broken feathers can be replaced with refills, prolonging life of birdie.
Birdies have solid, live-rubber base with small nipple at tip; each equipped with six selected white feathers. Paddles are of ⅜" plywood, with built up handles and leather tips. All equipment minutely fashioned. Sent on approval.

SELLS AERIAL TENNIS COMPANY
4838 Belinder Road KANSAS CITY, KANSAS

7. To avoid being tagged, slide.
8. Start your turn about thirty feet from the bag.
9. Make most of the turn before reaching the bag.
10. Try to hit the bag without breaking your stride.
11. Take your turn on every hit to the outfield, and be ready to break for second on any misplay.
12. Be careful not to pass a runner ahead of you. If you do so, you will be automatically out.
13. Run around any fielder who is in the act of fielding the ball. If you interfere with him, you will be called out.

Laying Down a Bunt

1. Keep in mind that the important thing to do is to "lay down" the bunt.
2. Stand opposite the front edge of the plate.
3. Get into position as the pitcher starts his wind-up.
4. Slide one or both hands up to the trademark.
5. Shift the feet by moving the front foot first.
6. Lower the body by bending knees and hips, and extend the bat well forward as the feet are being shifted.
7. Keep the bat extended, with the elbows slightly bent.

Illustration 6.

Illustrations 6 and 7 show Merrill May, former third baseman for the Philadelphia Phillies, now the Bluejays, preparing for that long throw from third to first. Illustration 6 shows good placement of the right foot while adjusting the arm and left leg for a hard overhand throw. Note in Illustration 7 May's feet are placed in line of the throw with the right leg helping to drive the throw.

8. Be sure the bat is held level with the ground and straight across the path of the ball.
9. Hold the bat just below shoulder level.
10. Grasp it loosely.
11. Move the bat up or down to get it in line with the ball by raising or lowering the body, not the arms alone.
12. Pull the bat back to your shoulder whenever you let a pitch go by.
13. A low ball is the best one to bunt.
14. Try to "top" the ball to avoid bunting into the air.

OUTFIELD PLAY

Catching Fly Balls

1. Take your stance whenever the pitcher steps onto the rubber.
2. Raise your hands from your knees and take a short step forward with each pitch.
3. In starting back, take the first step backward with the foot on the side toward which you are turning.
4. Try to reach the spot where the ball will land and "camp" there. Do not time your approach with the descent of the ball.
5. Run with body relaxed and weight on the toes.
6. Use your arms vigorously. Do not run with them outstretched.
7. Make your turn and go back under a fly hit over your head.

The Voit Ball of Tomorrow

is worth waiting for!

Today Voit's complete output of super Synthetic-Rubber-Covered Athletic Equipment is going to our far-flung fighting fronts—to help maintain morale among Uncle Sam's boys! Early in the fall, we expect to fill essential civilian needs. Remember, the Voit Ball of Tomorrow's worth waiting for!

Write for Illustrated Price List.

BUY WAR BONDS REGULARLY

VOIT SYNTHETIC-RUBBER-COVERED ATHLETIC EQUIPMENT

Mfgd. by W. J. Voit Rubber Corp., 1600 E. 25th St., Los Angeles 11, Calif.
Chicago Branch 180 No. Wacker Drive Zone 6

Illustration 7.

Illustration 8.

Illustration 9.

Illustrations 8, 9 and 10 show Billy Herman formerly of the Cubs and with Brooklyn, before going into the service, executing the double play footwork at second base. In Il-

8. Play long flies by going well back to avoid misjudging the "carry."

9. Put real effort into your run and never give up until you have made a final effort by leaping or diving for the ball.

10. Practice your turns until you can make them automatically and then practice going to the right and left, turning and going back, and also coming in on short ones.

11. Three-quarters of your fly-catching practice should be on balls hit over your head.

Playing Line Drives

1. Expect every line drive hit along the first- or third-base lines to curve toward the foul line.

2. Go after every line drive in an attempt to catch it.

3. If you can not catch it, try to get directly in front of it and play it on the long bounce.

4. The ball will be travelling fast when hit on a line, and your start and sprint to get in front of it must be made without hesitation. Start for the ball and try to judge its position as you move toward it.

Stopping Grounders

1. Get directly in front of the ball.

2. Take an infielder's position with the heels together and your body close to the ground.

3. Hold your hands close to the ground and extended in front of your body.

4. Watch the ball into your glove.

Backing Up the Bases and Other Outfielders

1. It is your duty to back up the base, just as it is the duty of the infielder to cover it.

2. Left fielder backs up third on throws from the catcher, and second on throws from the opposite side.

3. Center fielder backs up second.

4. Right fielder backs up first on throws from the catcher, on bunts, and second on throws from the opposite side.

5. With a man on base, start toward your base each time the catcher receives the ball or it is hit to an infielder.

6. As center fielder, be alert to back up second the moment the pitcher steps into position if there is a man on second.

7. In order to be in position to back up a base, you must be in motion before the ball is thrown.

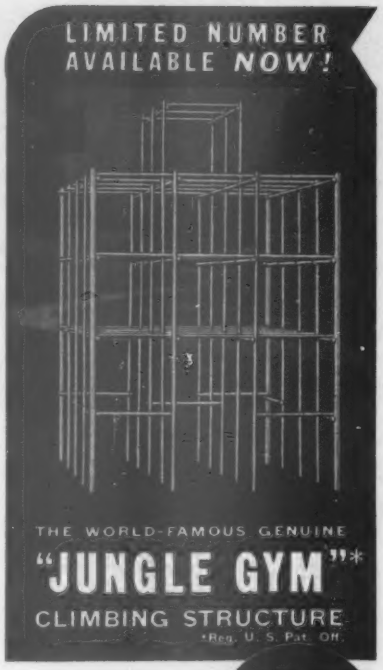
8. Back up the outfielder next to you on every ball hit to him on your side.

9. Call to him where to make the play.

Throwing to Bases

1. Jump or step into throwing position as soon as you have fielded the ball.

2. Bring the gloved hand up to a posi-



AND AT THE LOW PRE-WAR CEILING PRICE OF $150 F.O.B. FACTORY

The War Production Board has released materials to us to make a *limited* number of "Junglegym" Climbing Structures . . . for America's schools, parks and playgrounds . . . because the "Junglegym" Climbing Structure contributes vitally to the health and proper physical development of young America.

No war-time sacrifice in quality! All-steel construction, hot galvanized inside and out! Installed size: center tower, 10'-6" high; outside wall, 8'-6" high; length, 6'-3"; width, 8'-4". Capacity, 35 children.

But you must *act quickly!* Just a few are available . . . for *immediate* sale . . . first come, first serve!

WIRE OR AIR MAIL YOUR ORDER TODAY

Makers of the famous "Spalding", "Chicago" and "Louden" lines of Gymnasium, Playground and Swimming Pool Equipment

Our 76th ANNIVERSARY

THE J.E. PORTER CORPORATION
OTTAWA, ILLINOIS

tion in front of the shoulder of your throwing arm.

3. Get your feet on line with the point to which you are to throw.

4. Throw with an overhand motion with your fingers on top of the ball to give it the right spin.

5. Follow through by bringing the back leg around with the throw.

6. Bounce all throws except short ones.

7. With the bases occupied, learn to be moving toward the ball as you field it.

8. When a throw is necessary, catch fly balls with the back of the hands toward the face.

9. If third base is occupied, throw home if: 1. The other bases are unoccupied and you catch a fly; 2. You field a short fly close to the infield; 3. It is necessary to make a long throw to third.

10. Play for the *second* man on base if third is occupied except: 1. on a short fly, or 2. when the throw to third is long.

11. In the ninth inning with the winning run on third and less than two out, move in close to the infield and throw home if you field a short fly.

12. Before each pitch, decide where you will make the throw if the ball comes to you.

Playing Position

1. If you are a slow fielder, play deep.

2. If you have developed the ability to get under the ball, play closer to the infield.

Illustration 10.

lustration 8 he has just received a short throw from the shortstop and has adjusted his feet to hit the bag with his right foot.

In Illustration 9 he is shown on the bag and stepping toward the pitcher which takes him out of the runner's path. The ball is being taken from the glove in preparation for the throw.

Illustration 10 shows the final preparation for the throw, but unfortunately the picture was snapped a step too soon to show the completion of the throw. A good illustration of the second method of executing a double play as explained on page 13 of this issue.

3. If you can play rather close to the infield without missing balls hit over your head, you will make more put-outs.

4. In shifting against left-handed batters, the left fielder should move in and the right fielder out, and both should shift only a few steps to the left. The center fielder should shift from the left-field side of second base to the right-field side.

5. If your pitcher is fast, play deep and play the batter to swing late.

6. If your pitcher does not have much speed, play further toward the right against right-handers and more to the left for left-handers.

7. Make allowance for any wind. Keep in mind that a strong wind will carry a high fly a considerable distance.

8. Try to size up the way each batter hits and play him accordingly.

9. Play in close to the infield until there are two outs in the last half of the ninth with the winning run on third, then move back to your regular position.

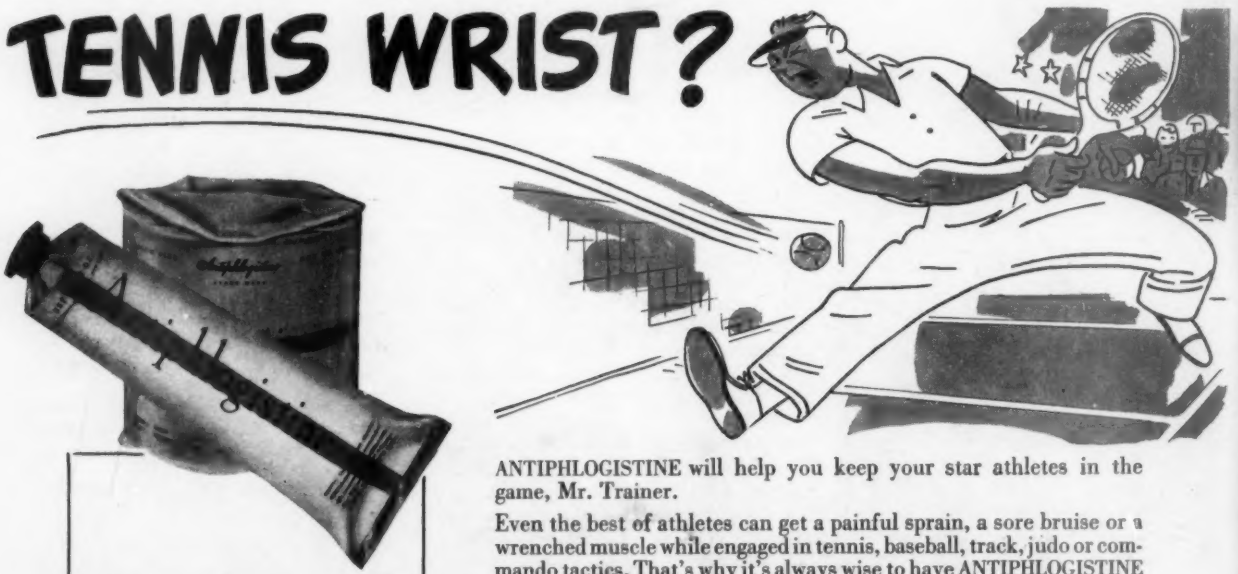
10. Do not catch a foul fly with the runner on third base unless it makes the third out or you can afford to give a run.

11. If you attempt to make a catch near some obstacle, run with your eyes upon it and then glance up to look for the ball as you approach the spot where you expect it to land.

12. When you start for a fly, call loudly "I have it" and continue to call if a team mate is nearby.

13. When a team mate calls for the ball, yell to him to "take it."

TENNIS WRIST?



ANTIPHLOGISTINE will help you keep your star athletes in the game, Mr. Trainer.

Even the best of athletes can get a painful sprain, a sore bruise or a wrenched muscle while engaged in tennis, baseball, track, judo or commando tactics. That's why it's always wise to have ANTIPHLOGISTINE on hand—because the *Moist Heat* goes right to work helping to ease the pain, reduce the swelling and hasten recovery from sprains, bruises and wrenched muscles. Order your supply now and remember to apply ANTIPHLOGISTINE early for best results.

Antiphlogistine

The Denver Chemical Mfg. Company
163 Varick St., New York 13, N. Y.

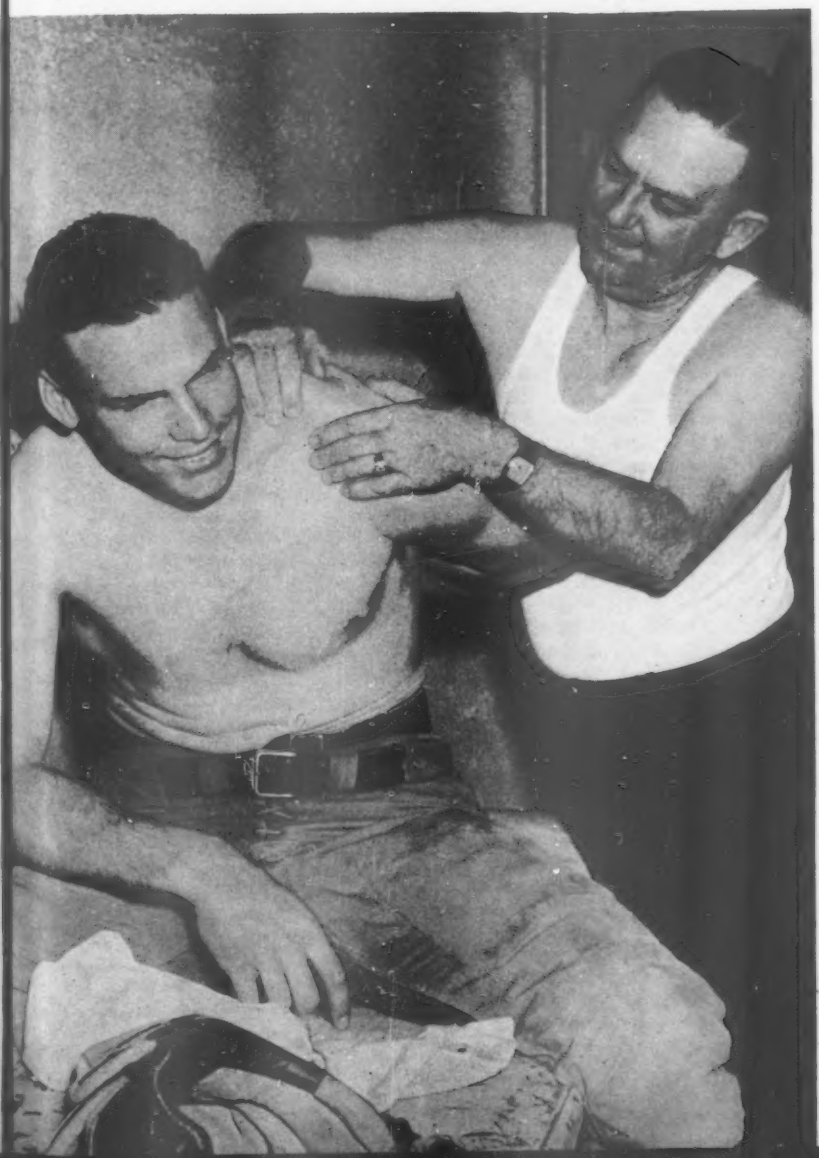
Have you received your free copy of "ATHLETIC INJURIES"?

TRAINERS JOURNAL

SECTION

The NATIONAL ATHLETIC TRAINERS ASSOCIATION

MAY, 1944 No. 9



Official Publication
Of the National Athletic
Trainers Association

The Fundamental Principles Underlying Training Rules
W. W. Tuttle

Why Exercise?
Lieutenant (j.g.) Lloyd C. Winter

Players, Red Flags, Officials Versus Rules
"Lil" Dimmitt

Excellent conditioning and training are given the athletes at Texas A & M by Athletic Trainer "Lil" Dimmitt.

The Fundamental Principles Underlying Training Rules

By W. W. Tuttle
Department of Physiology, University of Iowa

FOR the most part, well-defined training rules have proved to be essential in the preparation of athletes for strenuous competition. This is true because the wisdom and experience of many competent coaches and skilled athletes are incorporated in them. We sometimes, however, lose sight of the fact that each rule which is essential has sound scientific facts behind it. Sometimes, the evidence substantiating some of the elements of the training rules is clear; sometimes, it is somewhat obscure, and at other times there appears to be no good reason for some of the routine required. Nevertheless, in the training program we must accept the fact that there are necessary procedures which involve elements beyond the reach of laboratory demonstration. In the last analysis, the proof of whether a procedure or technique is useful, and should be retained in a training program, depends on the results yielded by its practice. If it makes an obvious contribution to the performance of the athlete, it must be scientifically sound in principle. In general, trainers and coaches are in agreement with scientists on the principles underlying sound training. There are naturally differences of opinion, however, as to the details involved in acquiring techniques and efficiency.

Training Rules and Habit Formation

Training rules are designed to provide conditions which are conducive to the best possible athletic performance. Their main purpose is to develop useful modes of action which can be carried out more or less automatically, that is, to establish good habits. We have been used to thinking of habits as fixed and invariable units of activity. But we have come to recognize the fact that no two habitually performed movements are exactly alike. Even the simplest actions are adapted to the details of the specific situation in which they occur. Habits then, have been defined as the smooth and ready co-ordination of certain elements of response. Thus in passing a football, there is a smooth and ready sequence of movements which tends to occur automatically. If the throwing form is satisfactory, the player can devote all his attention to the timing, speed and direction of the throw. If the mechanics of the throw are not satisfactory, more time must be devoted to the development of new throwing habits.

It is just as important to establish good habits in the routine of daily living, as it is in connection with athletic performance. The athlete in training should never have to ponder over the problem of what to eat, and when to eat it, what type of bath to take, and when to take it, when to go to bed, and when to arise in the morning. These problems should be solved by establishing the necessary habits, so that the reactions to all these situations are largely automatic. Good habits not only make for good performance, but also for more efficient living. This is true because routine becomes automatic, and it is only when it becomes necessary to deviate from the general plan of action that the athlete must decide on new procedures.

The Exercise Program

The most important part of athletic training has to do with developing proficiency in a chosen sport. Since college men must carry a full load of classwork, the element of time is an important consideration. Thus, it is necessary to make a close tie-up between the general conditioning program and the program designed to develop skill and team play. A basketball player must devote most of his practice time to playing basketball rather than participating in other types of exercises, although they may be excellent as a means of promoting good physical condition. By playing basketball, he not only develops from the standpoint of condition and endurance, but also he makes improvement in agility, speed, and ability to change direction quickly. At the same time, the techniques of the game, and of team play are developed.

From the standpoint of time, the athlete has a problem which must be well recognized by everyone involved in the sports program. Since scholastic requirements must be met, the exercise and conditioning program must come in second place. This being the case, the greatest economy may be gained in reaching proficiency in a sport, if the athlete confines his exercise to the sport itself, unless there are other forms of activity which contribute so much to success in his sport that he cannot afford to neglect them. It is on this basis that arm strengthening and ankle flexibility exercises may be justified for swimmers. It should be understood that we favor general conditioning and special developmental exercise, yet in the case of college athletes, the time element scarcely permits the development of an ideal conditioning program.

Sleep, Rest and Relaxation

Because of strenuous and prolonged exercise, the athlete gets so tired that he needs more time than the average person does for sleep, rest and relaxation. Instead of getting the necessary rest after strenuous exercise, the athlete often tries to study. But like anyone else, he is mentally inefficient after fatiguing bouts of exercise. The result is, that he does not do good scholastic work, and some may even go so far as to call him stupid. Studies regarding the scholastic attainments of athletes show that stupid people are no better as athletes than they are as students.[1] The difficulty is in balancing the rest, work, and study programs.

Since the athlete must budget his time more carefully than the ordinary student, he must develop time-saving habits. Regularity of performance, whatever the act may be, is most important. The athlete must learn by experience, how much sleep he requires, so as to be alert, and have zest for his daily routine. After he learns this, sufficient time must be arranged to get the required amount of sleep. A sleepy student will gain more in the long run by sleeping than by trying to listen to a lecture, or reading a book.

Rest habits are as important as sleep habits. Almost everyone can find short intervals during which rest may be had, if the individual has learned to rest. The secret to effective rest, as well as economy in sleeping, is to be able to relax promptly. Since this ability may be gained by practice, the athlete should cultivate the habit of prompt relaxation.

Proficiency in athletics, as well as in anything else, may be gained only when the athlete has zest for his sport. In order to have this zest, the participant must not only be in good physical condition and well trained in the technique of his chosen sport, but he must be rested and relaxed as well.

The Daily Routine

If an athlete is to adjust his daily rou-

1 Tuttle, W. W. and F. S. Beebee. A study of the Scholastic Attainments of Letter Winners at the State University of Iowa. *Research Quarterly* 12:174-180, May, 1941.

tine of living to the requirements of the training program, the first prerequisite is that he have sufficient interest in his sport. In the second place, he must be convinced that the requirements are not mere fancy, but that they are based on facts which are scientifically sound. When an athlete begins to doubt the usefulness of some of the training requirements, his observance of training rules becomes more difficult, due to this element of doubt.

It is granted that there are some elements in the training programs that are difficult to defend, partly because of their traditional use, and partly because of a paucity of scientific data to support them. To illustrate, let us conceider the question of diet. For a good many years, our lack of scientific knowledge relative to foods and accessory elements of diet was reflected in training diets. Menus were carefully selected, certain types of food were marked as undesirable and hard to digest, while great emphasis was placed on the special value of other foods. As we learned more and more of the facts concerning foods, the athlete's diet was placed in the same category as that of any individual doing strenuous work. During the period when such accessories to the diet as vitamins were under scientific scrutiny, they were misused because of the prevalence of erroneous ideas and theories. But now we are certain that the eating habits of the athlete present no more of a problem than those of the farmer. The trainer only needs to be sure that access is had to sufficient foods of wide enough variety to meet the requirements of normal active individuals.

Bathing habits serve as an example of misuse due to tradition. We know that the bath may serve either as a means of washing away dirt, or as a therapeutic measure for altering physiologic function. When athletes of some experience are told that, ordinarily, they should confine their baths to tepid showers, they sometimes question such a procedure, for it has been common practice to start with hot water and finish with cold. The only reason a group of athletes could give me for this procedure was that coach so-and-so told them to do it. When the function of bathing was explained to them, and the scientific reasons given for the use of the hot, cold and neutral bath, there were no difficulties in changing their bathing habits.

If training rules are to be made most effective, they must have well-established scientific reasons behind them. In addition, those who are asked to observe the training rules should believe in their virtue. Such a situation exists only when a trainer is able to back his rules with scientific facts.

Why Exercise?

By Lloyd C. Winter
Lieutenant (j.g.) U.S.N.R. Naval Air Forces
Formerly, Head Track Coach, San Jose State College

THIS article was written in the days of automobiles and the country week-ends in England but, someday, when the value of our training programs for necessary war conditioning is deemphasized, we will return to exercise for other reasons. The author, now in the naval air service, was former coach of Harold Davis at Salinas Junior College. Before entering the service Lieutenant Winter served as head track coach and assistant in football at San Jose State College.

YOU should exercise for the same reason that you service your automobile. When you exercise, you are tuning up the human machine; you are increasing the mileage of your stamina, getting rid of the carbon in your blood, replacing the worn-out parts of your tissues, improving the looks of the surface, and getting greater turn-in value on your sleep.

How we abuse this human machine, in which we drive around day and night when it is so easy to care for it! We always carry a spare tire on our automobile, but our reserve stamina, we entirely neglect. Our automobile, which may be replaced is serviced every thousand miles, whereas our body, our permanent means of conveyance, goes into the workshop only when some of its parts break down, often too late to do any good.

I have a friend who operates one of the largest conditioning quarters on the Pacific Coast. His clientele is made up almost entirely of college professors, doctors, and other professional men. He tells me that men with a reserve bank account in the five-figure class come to him with barely enough reserve energy to carry them from their homes to their swivel chairs and back. They all admit they fatigue easily, they can not sleep well, their digestions are bad, and they can not concentrate. Through a little rational exercise, in five weeks' time they are in the pink of condition. The pink of condition we shall define as that glorious state of health in which the muscles are hardened, the body full of vigor, you sleep like Rip Van Winkle, and when you awake, you feel like tearing a telephone book in two. Why does exercise do this for you? Let us lift up the hood and see.

We resemble an automobile because the parts of the body are similar to the parts of an automobile. It is true that some of us are more upholstered than others, some of us are built more on the lines of a truck, and some of us are definitely in the used-car class, but the parts that make us go are almost identical. Our muscles are miniature engines that push and pull us around at will. The efficiency and horsepower of these engines, strangely enough, depend upon their use. The more you exercise, the more the muscle tissues are broken down. If you are not entirely lacking in red blood corpuscles, they will be built up a little stronger each time, until you not only look well in a bathing suit, but you have developed a reserve stamina that you can call on any time that you need it. Here is what happens when a muscle contracts. The ignition system up in your medulla oblongata sends out a spark along one of your nerves to the muscle you are supposed to use, the fuel burns up, the muscle contracts, and whoops, you've picked up the collar button from the floor or whatever else you've finally stirred yourself to do. As in your car, carbon is left over after this process. The blood stream picks up this carbon, which is in the form of carbon-dioxide and lactic acid, and carries it up to your lungs, where it is blown out your exhaust pipe. Incidentally, this lactic acid is the cause of fatigue, and if it is not removed promptly, you will not only have a sore muscle, but you will also feel like death on a bicycle. How efficiently this lactic acid is removed, depends on your circulation, the efficiency of which in turn depends on exercise.

Exercising aids the efficiency of your circulation. As in any engine, the muscles require fuel. In the body this fuel is called glycogen, a form of carbohydrate. This glycogen is stored in your fuel tank, the liver, and must be sent up when needed. In other words, there is not enough blood in your body to digest mince pie, figure out your income tax, and hang a picture at the same time. So there is a pipe system with a set of valves that directs the blood to the place at which it is most needed. That is the reason, why it is not a good idea to exercise right after eating; that is the reason, why you should not look for that balance right after lunch, and why we get sleepy after Thanksgiving dinners. The blood is at work in digesting, and too busy to keep us mentally or physically active. The efficiency of this pipe system also depends upon its use. Efficient circulation will also make you less sensitive to heat and cold. When a

muscle contracts heat is formed. To prevent you from burning out a bearing, as the blood heats, the arterioles on the surface dilate and give your blood a chance to cool off—the same idea as the radiator in your car. When it is cold, the arterioles near the surface contract and drive the blood inward, where it has less chance to cool. So if you get red or blue in the face, it is just your radiator boiling over or freezing up, as the case may be.

If you are overweight or upholstered in the wrong places, you should exercise, because this is the only sensible way to reduce. If you want to reconstruct your front bumper, you must first exercise enough to drain all the fuel from your liver, so that your excess adipose tissue will be broken down and used for fuel. The adipose tissue or fat, acts as sort of an emergency fuel supply, and there is often too much of it. You must not refill this emergency tank by eating too much, as your calorie output must be greater than the intake. You too can have a streamlined figure, if you will but do a little exercising.

Exercising will cause an underweight person to eat more food. The greater metabolism will instill in you the hunger ravages of a starving wolf. Why do you eat more when you are outdoors on that camping or fishing trip? Principally, because you have had more than your customary exercise, and nature demands more food to replace the muscular tissue that you have broken down, and the excess fuel that you have used.

You should exercise because your heart, lungs, and kidneys owe their development to the demands of the muscular system, and therefore more exercise will give you better air-conditioning, strengthen your pump, and improve your waste disposal.

You should exercise because you will sleep better. There are few midnight sheep herders among the physically active. You will sleep better not only because your circulation is better, your heart stronger, and your digestion improved, but also because you will be tired physically, as well as mentally. I have come home from a day at the office utterly fatigued and ready for bed. I felt lower than a sunken submarine and thoroughly convinced that I was getting old. But I knew if I went to bed, I would have a mental wrestling match with myself that would surely end in a draw. Then I would get out the tow car of determination and pull myself out of this physical rut. Down to the athletic club I would go, and after an hour of badminton, or volley ball, or handball, or even boxing, that I would have believed physically impossible, I would come home with a pleasant glow of tiredness which wafted me into a sleep that only the alarm clock could penetrate on the following morning.

Your digestion will be better if you exercise, because the muscles of your viscera will be stronger, and can push a little harder on that forty-cent lunch, you have just eaten. The sedentary man can easily digest only the lightest of foods. It is probable that the nervous system is affected to a large extent by the weakening of these digestive powers. Without abundant air and exercise, sound digestion is not possible. The incompletely digested food ferments in the alimentary canal and the whole body, especially the brain, is depressed. If you are a sedentary worker, surely a little exercise is worth your time. You can be strong, healthy, and aggressive, even though you lead an indoor life. Why is physical education gaining as a compulsory subject in many states throughout the nation? One hundred years ago the school could rightly lay all its emphasis on books and learning. These, the home did not supply, but the home and the farm did supply physical exercise, vigor and perseverance. Now the schools must furnish these. In a word, they must be institutions of power as well as of learning, because a tough body and a sound nervous system are essential to our future citizens.

And now we come to what kind of exercise we should do. Almost any kind of exercise is good, from the passive exercise of massage to the strenuous exercise of boxing. Go slowly the first five hundred steps, or you will have to stop altogether. Sore muscles, stiff back, and cramped legs may be your only reward if you do not approach exercise rationally. If you have not been physically active for a long time, go to some physical trainer and let him be the guiding hand.

Do not think that exercising is a painful ordeal that must be endured. Whereas the old one-two-three-four bend at 7:30 A.M. was more work than an enjoyment and seldom lasted long even with the most determined of individuals, there are countless activities that can be a real source of happiness. I have a friend who came to me elated. "I've joined a softball team this summer," he said, "and although we have a perennial lease on the cellar position and make more errors than nine Australian bushmen playing bridge, it's more fun than anything I have ever done." His exercising is sugar-coated.

Tennis and badminton are two adult sports that are within reach of almost anyone. They are clean, active, and socially, as well as physically, advantageous. In England, tennis is part of the culture, and undoubtedly the most healthful of all British traditions. They play from six to sixty, and to be a member of a tennis club is the aspiration of every young Britisher.

Europe is not far behind the United States in realizing the value of physical activity, both as a source of health and of recreation. In England all members of the family get out in the country on week ends much the same as they do here, but in England they always take along a soccer ball, and everyone, from Uncle Marmaduke to little Mortimer, takes part in some variation of this sport. They seem to get more fun out of their picnics than the Americans who sleep under the last edition of the Sunday supplement. In the Teutonic countries, men and women get together for mixed doubles on the parallel bars or other forms of gymnastics —a bit strenuous, but surely more healthful than arguing over the bridge table. Tennis, folk dancing, skiing, riding, running, archery, and bathing are as popular on the continent as here.

Have you ever played archery golf? It is a great deal of fun, easy to learn, and will give you all the activity you need. The trick is to see how few strokes it will take you to knock a ball of worsted off tables, placed at random several hundred yards apart, around a course any size you want. A bow and arrow, a vacant lot, and a ball of worsted will suffice for equipment. Incidentally, you will not be able to resist target shooting with the arrows, and will have acquired a healthful hobby.

Recently, I have taken up two new sports, skiing and surf riding, although I am, perhaps, the world's worst skier. The first time I donned a pair of skies I was facing uphill and started to go downhill backwards. Well, you know those things haven't any brakes. I believe I would have come all the way down to the foothills, had not a tree inadvertently and abruptly halted my progress. If there is any more exhilirating sport than zooming down the slopes of a snow-laden mountain with the wind and snow beating a caprice on your face and your nerves tingling to the stimulation of that champagne-like air, then I should be pleased to know what it is.

Speaking further of winter sports, I believe that Sonja Henie's skating picture is the cause of 50,000 new amateurs taking spills on rinks all over the country, but 50,000 people are finding a new zest for living.

In surf riding you are being pushed, shoved and scraped at forty miles an hour toward shore and then dumped vociferously on a beach, well strewn with shells so as to scrape all the hide off your face and chest, but it is fun. No surf board is needed; only a wave, an insurance policy, and a great faith in your own ability are required. The idea is to catch the wave at the precise instant it is breaking, before it catches you. This battle of men against the sea gives a hundred to one odds on the sea to roll you along the bottom until you come up gasping, with a ton of sand under your bathing suit and your hair full of starfish, but it is great sport and not nearly so harmful as it sounds. You do not have to have the rolling stretches of Waikiki at your dis-

posal. Almost any coast line will do. The California coast is particularly adapted to this sport, with the best conditions at Laguna Beach.

Bowling on the green or in an alley (bowling alley) is a revived sport that started as a fad in Hollywood, and is one of the few Hollywood fads to do any one any good.

The instincts of hunting and fishing are born in all of us. About a million years ago one of your very great-grandfathers knocked a dinosaur in the head with a rock and carted him home for breakfast. This incident caused an hereditary trait to be born somewhere deep in your spinal column and needs only a little stimulation to make you an avid hunter or fisherman. Have you ever tried to entice a trout with a fly on the end of a piece of string? You have only to be bitten by that first bite, and you will forever be out after the mythical "big one" that is never caught. I caught a few whoppers about six inches long near my own back yard, and this led me on an excursion that took me to the High Sierras, and all over Canada. I had more laughs, more sleep, more rest, more eats, and more sheer zest for living than in any other three months of my life.

Last winter we decided to take our first whack at duck hunting. During the first hour before sunrise in which we tipped over our boat and stood shivering in the cold, I seriously questioned whether getting out of a warm bed for this was worth while. But you should experience the thrill that goes with witnessing the V-flight of ducks out of the first light of dawn. First your finger trembles, then you tremble all over. Shall you shoot? No, you'll wait. They're circling again now, closer. Well, we were so excited that three of us all shot the same duck, and when it hit the water, it sank. We came home tired, wet, and dirty, but with that miserable pleasantness that only a hunter knows. We are now all confirmed addicts.

Huxley once said that the struggle for happiness was truly more cruel than the struggle for existence. How do you know that knocking a little white ball around a golf green will be more fun than anything that you'll do next week, unless you try it? How do you know that volley ball, which is played in every Y.M.C.A. in the country, and requires little or no skill, will not make a host of new friends for you and keep your body at the peak efficiency, it now lacks. How do you know that any one of a hundred and fifty popular sports isn't more fun than sitting at home reading the paper, or going for that weekly drive through the park, unless you actually participate in them? Why exercise? You should exercise because you will look better, feel better, and be happier.

Players, Red Flags, Officials Versus Rules

By "Lil" Dimmitt
Athletic Trainer, Texas A. and M. College

FOOTBALL has its casualties, possibly less pronounced than war, but war operates under better rules and supervision. All of us, from players to coaches to spectators, want to protect the participants from injuries as much as possible, and it is with this thought in mind that I address these remarks through the pages of *The Athletic Journal* to the rule makers and the officials.

Based on an observation of many years as player, high school coach, and during the last ten years as trainer and assistant coach at the Agricultural and Mechanical College of Texas, I do not feel that the penalties for kneeing and other violations, coming under the heading of unnecessary roughness, are severe enough, nor do I feel officials are as diligent as they should be in calling the violation and punishing the team of the offender.

We'll call him "Trusting Joe," but he might have been any tower of line strength or of backfield elusiveness and power. It may be he was a scat-back or the big boy who could always be depended upon to pick up the needed two yards right through the middle. The armed services called him and he reported, wondering if he were bound for Europe, or one of those Pacific islands on the road to Tokio. He was sound physically—there could be no doubt about it—for hadn't he demonstrated his physical fitness on dozens of gridirons, and hadn't the public acclaimed his deeds in thunderous ovations?

Then came the rude awakening. The medico classed him 4-F and suggested a job in essential industry. Sitting right beside him, as he dressed, was the flute player in the band whom the army or the navy was giving three weeks to report for active duty.

Our Joe was rejected because of a bursted ear drum. Dejectedly he finished dressing, for all he wanted was to get out of there. Perhaps, he recalled that autumn day when the opposing player gave him the knee, not once but several times. His coach had protested and the spectators in the stands protested but the officials "didn't see it," or answered, "He didn't mean to do it," when the officials admitted kneeing had been done. No, they hadn't called a penalty when Joe got the knee but the air was full of red flags when Joe himself, carried away by the excitement of the game, got a little offside.

Far-fetched, you may say, but it is not a bit. It has happened many times, and it will happen again and again, if we do not do something about it.

In my ten years with the Texas Aggies, I have seen fully fifty wide-open kneeings, and I can count on the fingers of one hand the number of times penalties have been assessed for this offence. There was one boy who was kneed several times in one game and his school had to pay his expenses to a famous Northern hospital for treatment of head injuries. Three of our own boys have had noses broken by being slugged in the past three years, but no slugging penalties were called.

Football players are like apples, there is a "rotten one in every barrel." It is against such boys that I feel the other players are due more protection, for I am convinced that a great many, if not a majority, of the cases of kneeing are intentional. Any boy who would knee would lie about it.

Many times we, and other coaching staffs, have protested about kneeing, slugging, or jumping on. There is a stock answer on the part of the official, "I didn't see it," or "He didn't mean to do it." A penalty, if ever assessed, is fifteen yards for unnecessary roughness, or such other distance as the referee deems will fit the case, including ejection of the offender from the game. Are these violations called often enough? Firmly and flatly—they are not.

I believe the rule books should show in bold, black type an unmistakable penalty of half the distance to the goal line for each kneeing violation, whether done intentionally or unintentionally. I believe a crusade should be gotten under way by football officials to let every player know that the rule is there, and that it is going to be enforced in full spirit and letter. Then, we will have fewer injuries.

Announcements

ANNOUNCED on pages 24 and 25 of this issue, the Converse-Dunkel Basketball Summary for 1943-1944 is ready for distribution. The summary gives the final ratings of 534 college and service teams. Reprints of the attractive announcement, pages 24 and 25 are also available. Write your request to the Basketball Division, Converse Rubber Co., Malden 48, Mass.

SOFTBALL, a popular sport played by 5,000,000 Americans, is featured in an illustrated sports bulletin just issued by United States Rubber Company and offered free of charge to softball coaches, athletic directors, physical education instructors and individual softball players.

This compact, pocket-size bulletin, 5½ by 8½, will give the beginner the information he needs to play softball properly; it will give the experienced softball player important tips for improving his game.

Fundamentals for successful pitching, catching, batting, base running, infielding and outfielding are included, each illustrated by movie sequences. Photographic close-ups show the proper grip and release for the fast-ball pitch, the incurve and outcurve, the drop and rise ball. A section is devoted to the short fielder, key tenth position in softball. Special diagrams illustrate the various types of team defense.

Softball is the seventh bulletin in the popular sports library series being issued free of charge by the Keds Sports Department of United States Rubber Company. It may be obtained by writing to the company at 1230 Sixth Avenue, New York 20, New York.

WITH the 1944 baseball season already underway, Hillerich and Bradsby's annual handbook of baseball is of unusual interest to fans and players throughout the nation.

This year's "Famous Slugger Year Book" is full of information on the last World Series and All-Star records amply illustrated with pictures of the Major and Minor League Champions. An outstanding feature is "Science of Batting" by Ty Cobb, baseball's most famous player.

At the same time Hillerich and Bradsby have released their 1944 edition of "Official Softball Rules" which also contains pictures of winning teams and records of the 1943 tournaments. The two books may be obtained from sporting goods dealers throughout the country.

THE 1944 Spring Intramural Softball Tournament is approaching the final days. Get your brackets and instructions at once and be enrolled in this phase of the National Physical Fitness Program. See opposite page for details.

INDEX TO ADVERTISERS

Athletic Institute, The 36, 37
Bike Web ..... Cover 2
Brooks Shoe Mfg. Co. 27
Coca Cola Co. ..... Cover 3
Converse Rubber Co. 24, 25
Denver Chemical Co. 42
Dolge Co., C. B. 26
Ederer Co., R. J. 39
Esquire 33
Goldsmith Sons, Inc., P. 31
Hillerich & Bradsby Co. 29
Hotel Sherman 35
Indiana Basketball Coaching School 27
Ivory System ..... Cover 4
Kahnfast Athletic Fabrics 28
McGraw Hill Publishing Co. 26
Medart Mfg. Co., Fred 26
National Sports Equipment Co. 29
Petersen & Co. 39
Porter, J. E., Corp. 41
Rawley Company, The 1
Rawlings Mfg. Co. 2, 3
Reach, Wright & Ditson 17
Riddell, Inc., John T. 19
Seamless Rubber Co. 23
Sells Aerial Tennis Co. 39
Softball Tournaments ..... Cover 3
Spalding & Bros., A. G. 6, 7
Toro Mfg., Corp. 28
U. S. Rubber Co. 8
Voit Rubber Corp., W. J. 40
Wilson Sporting Goods Co. 5
Witchell-Sheill Co. 21

RS
..36, 37
Cover 2
..... 27
Cover 3
..24, 25
..... 42
.... 26
.... 39
.... 33
.... 31
.... 29
.... 35
.... 27
Cover 4
.... 28
.... 26
.... 26
.... 29
.... 39
.... 41
.... 1
..2, 3
... 17
... 19
... 23
... 39
ver 3
.6, 7
... 28
... 8
... 40
... 5
... 21
URNAL

The 1944 Spring Intramural Softball Tournament

☆

Make It a Part of Your Physical Fitness Program

Sanctioned by
The Amateur Softball Association
Awards by The Coca-Cola Company

Coaches and softball players,—last year we made an excellent start in staging an all-out nation-wide intramural softball tournament. Now we are out to double our participation. This year we want 200,000 boys and girls enrolled in our intramural softball tournaments.

Sanctioned by The Amateur Softball Association of America—an allied member of the A.A.U. Awards by The Coca-Cola Company.

(ENTRY BLANK)

Amateur Softball Association
8458 South Yates Avenue
Chicago, Illinois

Please enter our high school in the Amateur Softball Association Coca-Cola 1944 Spring Intramural Softball Tournament. It is understood that at the completion of this tournament by our school a set of 10 Sterling A. S. A. Coca-Cola Softball Awards will be sent us without charge.
We will have

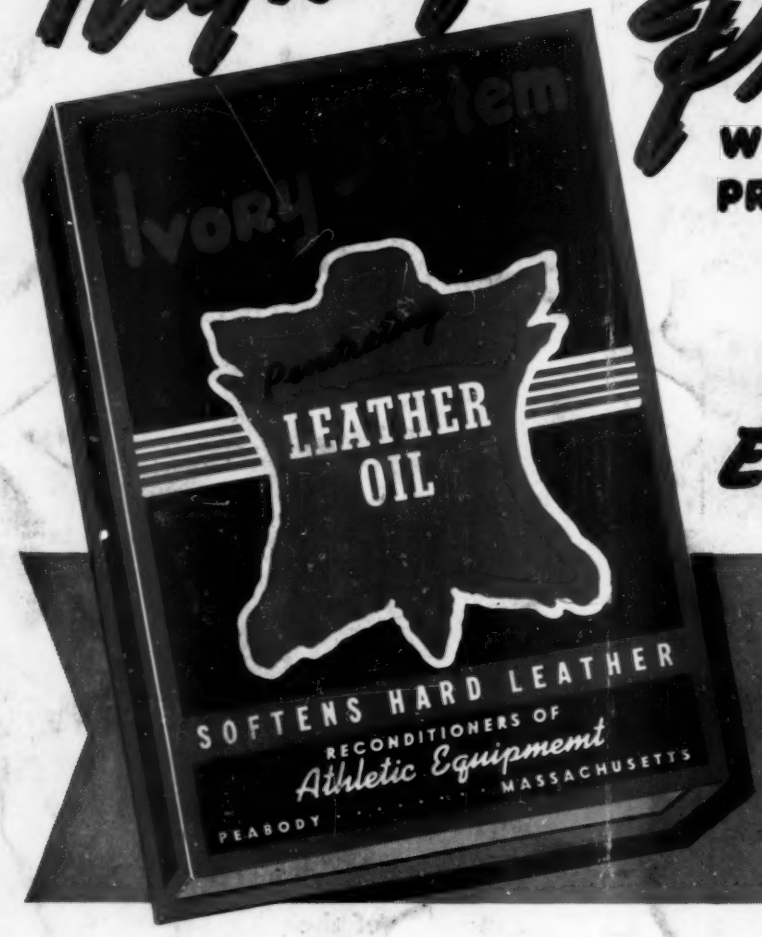
.....boys teams
.....girls teams

School name .....
City ..... **State** .....
Coach's name .....

No entry fees. No obligation. Just fill out the coupon and mail it in. You will be mailed brackets and all instructions giving full details for conducting your own tournament. Do it today . . . and get valuable awards laid aside for your school by The Coca-Cola Company.

A **USEFUL** AND

Highly Efficient Product



WHICH WILL HELP TO PROLONG THE LIFE OF LEATHER PARTS USED IN YOUR

ATHLETIC EQUIPMENT

Sample on Request

Ivory System

RECONDITIONERS OF ATHLETIC EQUIPMENT

PEABODY, MASSACHUSETTS